Accelerating Malawi's Economic Growth

Government of Malawi

Southern African Trade and Transport Facilitation Programme

World Bank

Environmental and Social Management Framework

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In coordination with:

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This **Environmental and Social Management Framework (ESMF)** was developed by the Environment Management Unit (EMU) of the Roads Authority (RA) of Malawi in coordination with the World Bank's Safeguards Specialists, during the Southern Africa Trade and Transport Facilitation Programme (SATTFP) preparation, in order to comply with the Bank's Environmental Assessment Policy (OP/BP 4.01). This instrument is part of the Project Operation Manual and should be applied during the Programme implementation.

September 2014

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Abbreviations

ARAP	Abbreviated Resettlement/Compensation Action Plan
CBO	Community-based organization
COMESA	Common Market for Eastern and Southern Africa
DEA	Director of Environment
DIA	Direct Influence Area
DSE	Department of Safety and Environment (of the MOTWP)
EAC	East African Community
EAD	Environment Affairs Department
ECPRW	Environmental Code of Practice for Road Works
EIS	Environmental Impact Statement
EMA	Environmental Management Act (1996)
EMC	Environmental Management Committee (district level)
EMU	Environment Management Unit of the Road Authority
ESFR	Environmental and Social Final Report
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMR	Environmental and Social Monitoring Report
ESSF	Environmental and Social Screening Form
GoM	Government of Malawi
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IDA	International Development Agency
IIA	Indirect Influence Area
LGA	Local Government Authority
MBS	Malawi Bureau of Standards
MoTPW	Ministry of Transport and Public Works
NCE	National Council for the Environment
NSSD	National Strategy for Sustainable Development
NEAP	National Environmental Action Plan, 1994
NEP	National Environment Policy, 1997
NSC	North-South Corridor
NGO	Non-Governmental Organization
PAPs	Project Affected People
PPRA	Public Procurement Regulatory Authority
RA	Roads Authority
RAP	Resettlement/Compensation Action Plan
RMF	Resettlement Management Framework
SADC	Southern Africa Development Community
SATTFP	Southern African Trade and Transport Facilitation Programme
STDs	Sexually Transmitted Diseases
TCE	Technical Committee on Environment
TEC	Tender Evaluation Committee
THC	Total hydrocarbon
ToR	Terms of Reference
WB	World Bank

Glossary

- **Biodiversity:** Short form for biological diversity". Biodiversity refers to the wealth of ecosystems in the biosphere, of species within ecosystems, and of genetic information within populations.

- **Biosphere:** That part of the earth – atmosphere system that supports and is characterized by life, encompassing all terrestrial and aquatic ecosystems.

- **Biota:** A collective term that denotes all the living organisms in a particular space.

- **Cumulative impacts:** Those impacts that result from the incremental impacts of individual events, when added to other past, present and foreseeable future events. The individual impacts contributing to the cumulative impacts may be minor on their own, but the impacts collectively may be significant.

- **Direct impacts:** Those impacts that are caused by a specific action and which generally occur at the same time and place as the action.

- **Ecology:** The study of relationships of organisms to their environment (or surroundings). It considers individual organisms, as well as large units of landscape, such as forests, estuaries and river basins.

- **Ecosystem:** Ecosystems are the basic structural units of the biosphere, characterized by interdependent interaction between the component species and their physical surroundings. Each ecosystem occupies a space where macro-scale conditions and interactions are relatively homogeneous.

- **Ecotone:** A habitat that occurs at the boundary between adjacent, but significantly different ecosystems. Ecotones are in general relatively biologically diverse, as they may contain species native to both bordering ecosystems.

- **Endemism:** A condition where species occur only in a single, spatially limited and distinct location, such as isolated islands, mountain valleys, caves, lakes, and craters. Endemic species are often highly specialized to the limited environmental conditions in which they exist, and are thus vulnerable to changes introduced from outside.

- **Environment:** Surrounding conditions that include all those physical, chemical, biological and socio-economic factors that impinge on an individual, a community, or a population.

- **Environmental and Social Management Framework (ESMF):** A management instrument that will be implemented by RA in the "Southern Africa Trade Transport Facilitation Project – SATTFP", in order to ensure compliance with Malawian national law and the World Bank Safeguards Policies.

- **Environmental and Social Management Plan (ESMP):** A synthesis report containing all proposed mitigation and monitoring actions, and, defining a timeline, specific, assigned responsibilities, and follow-up actions. The ESMP is one of the most important outputs of the environmental assessment process.

- **Environmental and Social Impact Assessment (ESIA):** The systematic process by which the effects on the bio-geo-physical and socioeconomic environment of a proposed human action or set of actions are evaluated, producing a set of recommendations which serves as influential input to the design of the action or actions.

- **Environmental Audit (EA):** The evaluation of effectiveness of environmental management and monitoring practices and procedures during and after a project (e.g., post-project evaluation) so that remedial measures can be taken. An audit may also be a comparison of actual impacts against predicted impacts.

- **Environmental expert:** Environmental expert means an individual person or a firm of experts which has requisite qualifications prescribed by the regulations on registration of environmental experts made under the Environmental Management Act and duly certified and registered in the Register of Environmental Experts as may be kept and maintained by the National Environment Commission (NCE).

- **Environmental impact:** An effect (positive or negative) on an environmental resource or value resulting from infrastructure development projects.

- **Environmental Impact Assessment Process:** A systematic procedure to consider the possible environmental impacts of proposed projects before a decision is made to approve the project.

- **Environmental Impact Statement (EIS):** A document that contains the results of an EIA study.

- **Environmental Inventory (EI):** A description of the environment where a particular proposed action is being considered. Other similar terms include: Environmental baseline study (EBS), Environmental Identification (EI), and Environmental Setting (ES).

- **Environmental management:** Management and control of the environment and natural resource systems to ensure the long-term sustainability of development efforts.

- **Environmental monitoring:** Continuous or periodic surveillance of the project activities to ensure that mitigation measures are followed during project implementation. It involves repeated observation and measurement of environmental quality parameters to observe changes over a given period.

- **Environmental planning:** All planning activities with the objective of preserving or enhancing environmental values or resources.

- **Environmental review:** A process that entails preparing a detailed EIA, a Preliminary Environmental Assessment, or no further action or analysis depending on the results of screening process.

- **Environmental scoping:** It is an early, open identification of potentially significant environmental impacts and the elimination of insignificant impacts or impacts that have already been addressed by other EIAs. It may also simply refer to procedures for determining the scope of environmental issues to be covered in the EIA process.

- **Environmental screening:** It is the determination of the level of environmental impact assessment required for a particular proposed activity or project. It may also refer to procedures for categorizing projects based on professional judgment.

- **Impact:** The effect of any action that affects one or more elements of the natural, social, or economic environment, either negatively or positively.

- **Indicators:** Physical, chemical, biological, or socio-economic attributes that provide some indication of the environmental condition.

- **Indigenous peoples:** Collectively, the members of cultural groups that have a historical, ancestral, spiritual, and functional connection to the land on which and from which they live. In popular usage, indigenous peoples are distinguished from members of those cultural groups whose connection to the land on which they live is limited to the historical period.

- **Indirect impacts:** Those impacts that are closely, but indirectly linked to the project activities that induce changes in the natural environment, population, economic growth, and land use.

- **Key stakeholders:** The inhabitants of an area affected by a project, who have the most to lose or gain from the completion of the project, and whose concerns must be addressed in an environmental assessment.

- **Limited environmental impact assessment:** Limited environmental impact assessment (limited EIA) means an EIA, where only the environmental issues, which are exceeding the environmental screening criteria, will be addressed in the environmental impact study and the environmental impact statement

- **Mitigation measures:** Actions taken to reduce, avoid, or offset adverse (negative) impacts. Mitigation options include: (1) prevention (e.g., rejecting a project), (2) amelioration (e.g., modifying the design) and (3) compensation (e.g., replacing an economic activity or investment).

- **Natural areas:** Terrestrial and aquatic areas where the component ecosystems are characterized primarily by native species, and where human activities have not altered the ecological function to the point where the ecosystem has changed its character or distribution.

- **Participation:** A process through which stakeholders influence and share control over development initiatives and decisions on resources that affect them.

- **Periodic maintenance:** Activities that are typically scheduled over a period, such as road resurfacing and bridge repairs.

- **Project Affected People (PAP):** Individuals, groups or communities, or other organizations, whose interests may be directly affected by the location, construction and operation of the project.

- **Project area:** The area that includes the immediate and the proximate area of a project that the project may have an environmental or social impact on.

- **Proponent:** The agency, unit, or individual who proposes, and is responsible for a project. For road projects it will typically be the relevant road authority.

- **Public involvement:** The dialogue, encompassing consultation and communication, between a Roads Authority and the stakeholders. It includes dissemination, solicitation, and presentation of information.

- **Resettlement/Compensation:** A term often used to describe the process of re-establishing lifestyles and livelihood following the relocation of affected persons.

- **Resettlement/Compensation Action Plan (RAP):** A plan to address the issues of involuntary resettlement, compensation and rehabilitation of people and communities affected by a project.

- **Resilience:** A measure of how quickly an ecosystem or environmental variable returns to its natural state after cessation of a disturbance.

- **Routine maintenance:** Refers to activities such as grading, grass cutting, drain clearing, pothole patching, and shoulder repairs, usually performed on a daily, weekly or monthly basis.

- **Significance:** An expert evaluation and judgment of the magnitude of impact or the degree to which a proposed activity or project may (potentially) impact on the environment if implemented.

- **Significant impact:** A substantial or potentially substantial, adverse change in any of the physical, biological, or social factors of the natural or built environment.

- **Social impact:** An effect (positive or negative) on a social issue resulting from an infrastructure project.

- **Stakeholder:** Any person or group having interest in or being directly or indirectly affected by a proposed or past project.

- **Synergistic effects:** Those effects that result from the combination and interaction of individual impacts. The effects are often greater than the sum of the individual contributing impacts.

Chapter 1: Introduction

1.1 Background

The Southern Africa Trade and Transport Facilitation Programme (SATTFP) Malawi originated from the objectives of the Tripartite[1]. The Heads of State and Government of the COMESA/EAC/SADC Tripartite met on June 12, 2011. The summit represented the official launch of negotiations with all twenty-six participating countries on the Tripartite Free Trade Area (FTA). It was also agreed that the integration process will be anchored on three pillars: (a) market integration to stimulate intra-regional trade based on the Tripartite FTA; (b) infrastructure development to enhance connectivity and reduce costs of doing business across borders; and (c) industrial development.

The SATTFP Programme in Malawi is supported by the recommendations of the Africa Infrastructure Country Diagnostic (AICD) and the World Bank's New Africa Strategy. The AICD highlights that Africa's infrastructure networks increasingly lag behind those of other developing countries and are characterized by missing regional links and stagnant household access. It notes that regional integration can contribute significantly to reducing infrastructure costs, by allowing countries to capture scale economies and manage regional public goods effectively

In this context, in order to ensure adequate environmental and social management during the Programme implementation and the projects execution, and to comply with the national environmental laws and the World Bank's Environmental Assessment Policy (OP/BP 4.01), this "**Environmental and Social Management Framework (ESMF)"** was prepared during the project preparation phase. This is based is based on the Malawi's Environmental Impact Assessment Guidelines (1997) developed by the Environmental Affairs Department (EAD) of the Ministry of Environment and Climate Change Management and also the Environmental Guidelines of the Road Sector (2004) developed by Environment Management Unit (EMU) within the Roads Authority (RA) in the Ministry of Transport and Public Works (MoTPW).

1.2 Objective of the Frameowork

The overall purpose of the ESMF is to include effective environmental and social management during the "project cycle", in order to ensure the quality of the projects and to comply with the national laws and the World Bank Safeguards Policies. The RA, through the EMU, should implement the ESMF during the "project cycle" of the projects that the Programme will support.

Some specific objectives of the ESMF are:

- Present the policy, legal and institutional framework related to the environmental and social context in the road sector; and

- Introduce an environmental due diligence process to present methodologies, instruments, procedures, and responsibilities (role) for environmental and social management.

[1] The Tripartite is an umbrella organization consisting of three of Africa's RECs: the East African Community (EAC), Common Market for Eastern and Southern Africa (COMESA) and Southern Africa Development Community (SADC), established with the objective of accelerating economic integration.

This instrument should be applied by the RA in the SATTFP Programme, but it can be use also in another projects or programmes that the RA will be implementing in order to assure a good environmental and social management in these operations.

1.3 Scope of the Framework

The ESMF is an instrument to be applied by RA, and specifically by the EMU, to guide it in environmental and social management.

The instrument is structured as follows:

- **Chapter 1,** presents the background of the SATTFP, the objectives and the scope of the ESMF;

- **Chapter 2,** describes the SATTFP "Project" and its components; and a description of the Rehabilitation Road Project Songwe-Karonga, Bwengu-Chiweta, and Kasungu-Lilongwe including the establishment of One-Stop Boarder Posts at Mwanza and Dedza that will be financed by the World Bank;

- **Chapter 3,** presents an diagnosis or overview of the National Policy, legal and institutional framework; and a environment and social characterization of Malawi;

- **Chapter 4,** describes the Bank's Safeguards Policies that should takes into account during the Programme implementation;

- **Chapter 5,** present the main environmental and social impacts and measures in the road sector;

- **Chapter 6,** the Environmental and Social Management where include methodologies, tools and internal procedures of the Environmental Affairs Department in order to ensure adequate environmental and social management; and

- **Chapter 7,** a summary of the Environmental Assessment Process based on the Environmental Impact Assessment Guidelines (1997) developed by Environmental Affairs Department.

The instrument includes **7 Annexes,** which contain additional information that complement the document and the formats that should be used as part of the environmental and social management during the project cycle.

This ESMF was developed by the RA and specifically with the Envirnmental Management Unit (EMU) in coordination with the Bank's Safeguard Specialists. According with the Bank's requirements of consultation, the final document was socialized with the stakeholders in a workshop held in Lilongwe on September 24, 2014. The results and evidence of this consultation process is included in the **Annex 1**. Also the ESMF was disclosed in the RA website and the World Bank InfoShop in compliance with the Bank's disclosure policy.

Chapter 2: The Programme

2.1 Background

2.1.1 Regional Level

The Eastern and Southern Africa region is highly diverse but with considerable potential for significant gains from deeper integration. The countries of the region range from South Africa; the continent's most advanced economy, with advanced manufacturing and service industries, and superior logistic services, to some of the smallest and poorest, *inter alia* Swaziland, Malawi, and the Democratic Republic of the Congo. In addition, the region contains a number of countries, such as Zambia, Malawi, Burundi, Lesotho, and Rwanda, with untapped agricultural potential and natural resources, and a labor endowment that is trained, relatively inexpensive, and well-positioned to compete globally.[2]

The region has enjoyed above global average rates of economic growth over the period 2000-2008 driven by increasing global demand for primary commodities, but complemented by growing inter-regional trade, albeit from a low base. The region's trade with the rest of the world increased significantly, tripling between 2000 and 2011 from US$50 billion to US$260 billion. However, this value falls to about US$60 billion, if South Africa is excluded.[3] Exports from the region include copper, other minerals and agricultural commodities from South Africa, DRC, Zambia, Zimbabwe and Malawi, while imports include chemicals, mining parts and equipment, general consumer goods, etc.

Despite this growth, intra-regional trade remains modest: Regional trade in Southern Africa amounted to only 13 percent of total trade in 2011, and the region compares poorly in this respect with other world regions. As examples, regional trade in Europe reached 70 percent of total trade in 2011; in North America, 40 percent; and in Association of Southeast Asian Nations (ASEAN), 30 percent.[4] Trade with South Africa accounts for more than half of total intra-regional trade: For example, 60 percent of Zambia's regional exports and 50 percent of its regional imports are with South Africa. Over 90 percent of Malawi's regional imports are from South Africa, while South Africa is a destination for only 10 percent of Malawi's exports.

The countries of the region face a number of common problems: the region includes a large number of relatively small states, a number of which are landlocked; it is geographically remote from both the more mature markets of Europe, America and Japan, and the emerging markets of China, India, Indonesia and Brazil; a number of countries have high rates of unemployment and poverty, particularly among the low-skilled, a large informal sector, and an overreliance on primary commodities; and from a global perspective, the region represents a number of disparate and relatively small markets, whose aggregation is complicated by physical and institutional barriers, such as distance, the poor quality of the infrastructure, and continued intra-regional policy and regulatory discrepancies, despite a number of earlier initiatives.[5]

[2] The World Bank Group (2011a), *Harnessing Regional Integration for Trade and Growth in Southern Africa*.
[3] International Monetary Fund (2011), *Direction of Trade Statistics*, (based on goods value exports US MM)
[4] International Trade Center (2012) Trade Map, International Trade Statistics Database.
[5] The East African Community (EAC) Customs Union and Common Market, the Common Market for Eastern and Southern Africa (COMESA) Free Trade Area, and the Southern African Development Community (SADC) were all designed and established, to a great extent, to facilitate regional trade.

Improving the regional transport network is a necessary condition for both competitiveness and regional and global economic integration. High transport prices/costs, including time, are a major obstacle to increasing trade and economic growth: Amjadi and Yeats (1995)[6] concluded that, in Africa, transport costs represent a higher trade barrier than import tariffs and trade restrictions. Freund and Rocha (2011)[7] report an inverse correlation between inland travel time and export performance, with a one day decline in the former leading to a seven percent increase in the latter. Recent research points to predictability as being, at times, even more important for logistic performance. The delivery of exports in Eastern and Southern Africa is twice as unpredictable as in an average emerging country, measured by standard deviation from mean clearance times. The cost of each additional day of delay is estimated to be as much as US$ 200-400, adding to high transport costs/prices.[8]

2.1.2 The North – South Corridor

The broader North-South Corridor (NSC) extends some 3,900 km from Dar es Salaam in Tanzania to Durban in South Africa. The corridor encompasses both road and rail networks, and maritime and inland water ports, and is a very important strategic trade route. The so-called broader NSC actually comprises two sub-corridors, the Dar es Salaam Corridor (more commonly known as the Dar Corridor), connecting Malawi, Zambia and the DRC, and the traditional North – South Corridor, from Durban to DRC, Zambia, Zimbabwe, Botswana, Malawi and northern Mozambique. The former extends for about 1,900 km from Dar es Salaam in Tanzania to Kapiri Moshi in Zambia, and includes branches linking to the neighboring countries of the DRC, and Malawi; whilst the latter runs from Durban in South Africa to the DRC, linking Zambia, Zimbabwe, Botswana, Malawi and northern Mozambique.

The region appears relatively well endowed with physically continuous road and rail networks, linked to maritime and inland ports. However, there are major deficiencies in all the surface transport modes: the infrastructure is frequently poor or incomplete, inadequately maintained, or there are limitations in organizations, management, and coordination, particularly at the ports and border crossing operations. Overall, the core regional road network is in fair condition, but some sections are in poor or very poor condition, notably in Zimbabwe, Malawi, Zambia, Malawi, and Mozambique.[9] Railway performance is poor and unreliable, and as a result, 80 percent of all freight on the corridor is moved by road transport. Transport costs along the corridor are some of the highest in the world, requiring almost seven days for the 2,000 km trip by road (carrying one Twenty Foot Equivalent Unit [TEU]) from Dar es Salaam port to Lusaka in Zambia, and costing US$ 5,000.[10] The figure that follows presents the transport corridors for Malawi.

[6] Amajadi A., & Yeats A.J. (1995) *Have Transport Costs Contributed to the Relative Decline of Sub-Saharan African Exports*, World Bank Policy Research Working Paper 1559.

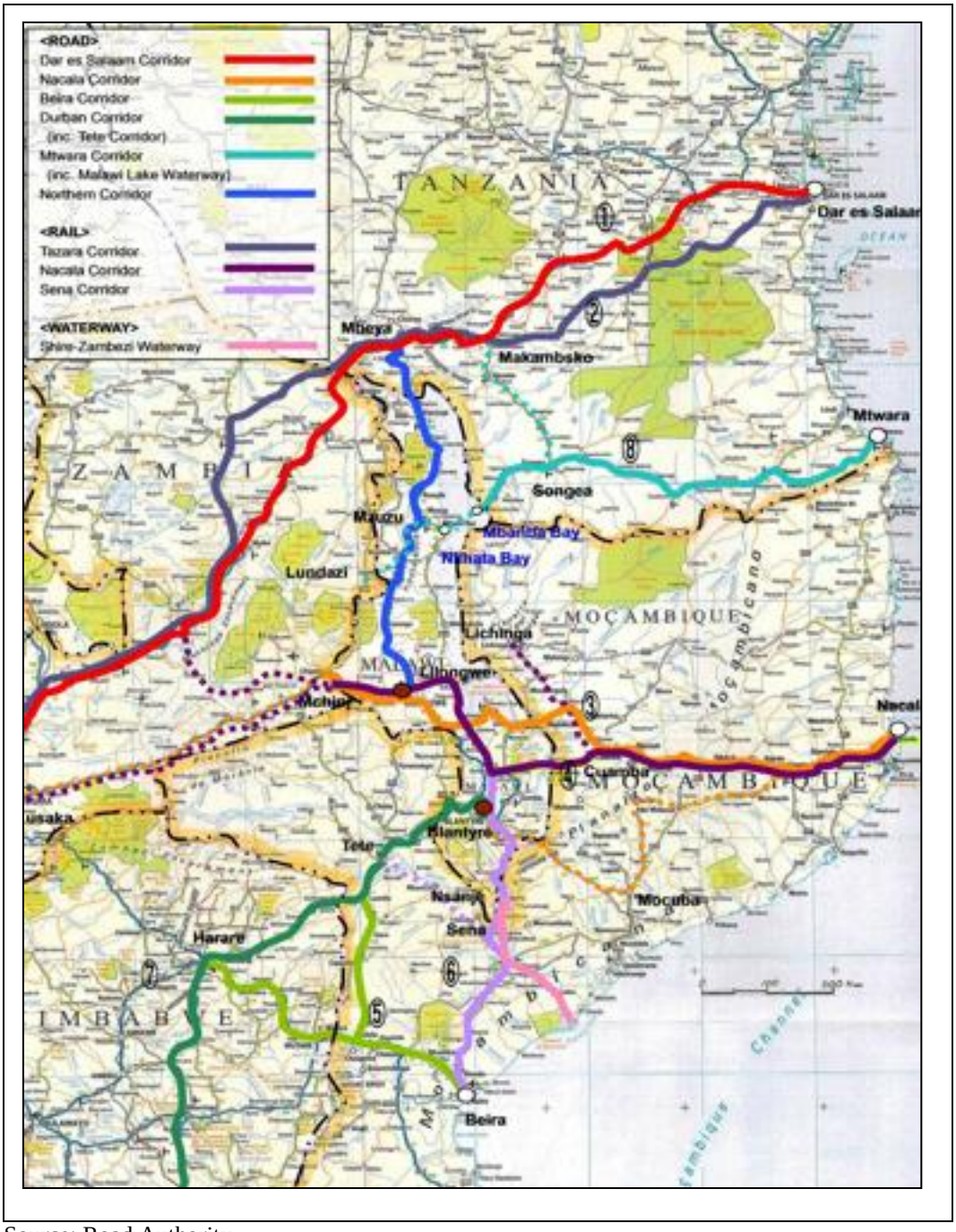
[7] Freund, C., & Rocha, N. (2011) What Constrains Africa's Exports? *The World Bank Economic Review*, Volume 25, Number 3, pages 361-386.

[8] Arvis, J.F., G. Raballand and J.F. Marteau (2010) *The cost of being landlocked: logistics costs and supply chain reliability*, The World Bank Group.

[9] Nathan Associates (2011), *Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa*. A study funded by PPIAF.

[10] World Bank (2012), *Op Cit.*

Figure No. 1: Malawi Transport Corridors



Source: Road Authority

There are main international sea ports at the end points of both rail and road networks on the NSC, with the Port of Dar es Salaam in the north and the Port of Durban in the south. Durban and Dar are the largest ports on the corridor and the only ones with sufficient volumes to justify direct calls by major shipping lines. Secondary ports, such as Nacala and Beira located on branches off the corridor, receive calls from feeder vessels coming from hub ports in the area, particularly Durban. Beira Port is constrained by the absence of a direct rail connection and limited depth of the port. Whilst Nacala Port is situated in a deep-water bay offering natural protection for very large vessels, it currently remains a relatively small feeder port.

A further major impediment to trade flows on the corridor are the border crossings. The NSC is served by main border posts at Kasumulu/Songwe, Tunduma/Nakonde, Kasumbulesa/DRC, Chirundu, Beitbridge, Mchinji/Mwame, among others. A recent analysis of the road corridor from Durban to Lubumbashi in the DRC revealed that border posts were responsible for 15 percent of the total monetary costs (comprising one percent, one percent and 13 percent for Beit bridge, Chirundu and Kasumbalesa, respectively) and 37 percent of the total travel time (comprising 13 percent, 11 percent and 13 percent for Beitbridge, Chirundu and Kasumbalesa, respectively) for the movement of a consignment.[11] The analysis also revealed mean processing times of 39 hours at Chirundu, 48 hours at Beit Bridge, and 49 hours at Kasumbalesa.

Road transport along transit corridors has been identified as a major factor in the spread of Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS). Transport workers, their spouses, and their sexual partners have long been identified as vulnerable groups at high risk of HIV/AIDS.[12] This finding reflects that: (a) the former are often absent from home for prolonged periods, increasing the likelihood of unsafe sexual activity; (b) there is often a lack of knowledge among long-distance truck drivers as to risky and safe behavior; (c) there is often higher than average level and frequency of alcohol consumption among this group, increasing the incidence of risky behavior; and (d) the increased mobility can itself facilitate HIV transmission from areas of high prevalence to areas of low prevalence but high vulnerability, both nationally, and across borders.

Malawi, along with other countries in the region, has a nationally adopted HIV/AIDS program. Awareness of the risk of HIV/AIDS has been increased through education initiatives in the schools. The incidence of HIV among adults in Malawi has declined slightly from an estimated 14.5 percent in 2005 to 10.8% percent in 2012. Nevertheless, activities addressing the risks of HIV/AIDS transmission among truck drivers and surrounding communities along transit corridors have not been implemented in a systematic manner. Empirical evidence has revealed that commercial sex workers and long-distance truck drivers represent one of the most vulnerable population groups in Malawi . In addition, National AIDs Commission of Malawi, the national body leading the multi-sectoral response to the HIV/AIDS epidemic, has confirmed an acute need for improved HIV mitigation activities in the transport sector.

Similarly, fatalities and injuries from road traffic crashes represent a significant and growing economic and social cost in Africa. Road Safety is both a development and a public health priority in low and middle-income countries in Africa. Road crashes disproportionately harm the poor, plunging families into poverty, and forming a substantial drain on a country's resources. Road traffic crash mortality rates were nearly five times higher in Africa in 2002 (averaging 28.3 fatalities per 100,000 head of population) than in the best performing Western European countries (approximately six fatalities per 100,000 head of population in the United Kingdom, The Netherlands, and Sweden).[13]

2.2 Programme Description

The Southern Africa Trade and Transport Facilitation Programme (SATTFP) is a regional, multi-sector, and multi-phase project intended to further facilitate trade integration in the region by contributing to the alleviation of institutional, legal, policy, and road infrastructure constraints

[11] Nathan Associates (2011), *Definition and Investment Strategy for a Core Strategic Transport Network for Eastern and Southern Africa*. A study funded by PPIAF.

[12] See *inter alia* The World Bank Group (2008), *Lessons Learned from Mainstreaming HIV/AIDS in Transport Sector Projects in Sub-Saharan Africa*. Washington D.C, The World Bank Group (2009) *Transport against HIV/AIDS: Synthesis of Experience and Best Practice Guidelines*. Transport Paper 25.

[13] World Health Organization/The World Bank Group (2004) *World report on road traffic injury prevention*.

along the constituent parts of the North South Corridor (NSC). The Project design involves the identification of institutional, policy and social priorities for the corridor as a whole then, based on the identified framework, the design and implementation of suitable interventions in sequence at a national level. The first phase will focus on the Northern Corridor between Songwe Boarder and the Capital City of Malawi, Lilongwe given the issues related to the transport of goods from the port of Dar res Salaam to Lilongwe and further to Zambia, DRC and South Africa.

2.2.1 Components

Component 1: **Improving the physical infrastructure**

The first phase will focus on the rehabilitation of the section of the corridor between Songwe/ Kasumulu Border and Karonga Town Assembly. This is a section of the Malawi-Zambia highway (TANZAM). This section is located in Karonga District of the Northern Region of Malawi and is 45 km long. The estimated cost of this sub-component is US$ 30,234,991.50.

The second phase focuses on rehabilitation of the Bwengu-Chiweta Section. This is located in Rumphi District of the Northern Region of Malawi. The road stretch is 60 km and is estimated at cost of US$ 40,313,322.00.

The third phase is the rehabilitation of the Kasungu-Lilongwe section of the corridor. This part is located in Lilongwe and Kasungu districts in the central part of Malawi. The stretch is 150 km long and will cost US$ 102,768,750.00.

The responsibility of constructing the One-Stop Boarder Posts for Songwe/Kasumulu, Dedza and Mwanza fall out of the jurisdiction of the Roads Authority.

Component 2: Mitigating the social costs. The second component also has two sub-components:

(a) ***Road Safety Initiatives on the Corridor*** include: (a) the undertaking of a Road Safety Audit to identify accident "black spots" along the Malawi portion of the corridor, the preliminary design of specific interventions to address them; (b) the undertaking of a management capacity review for the corridor and the identification of a pilot 'safe corridor' initiative; and (c) the preparation of detailed designs, technical assistance, and implementation of measures.[14] The estimated cost of this sub-component is US$7.0 million; and

(b) ***HIV/AIDS Initiatives on the Corridor.*** This sub-component will refurbish and extend priority lower level health centers, serving the Corridor, and the population in the hinterland. It will also include the purchase of essential equipment, such as CD 4 count machines, and small incinerators for clinical waste, and provide technical assistance to develop the capacity of the staff in the local health centers, both in HIV/AIDS awareness, counseling and testing, but also the appropriate disposal of medical waste.

Component 3: Improving Trade Facilitation. The objective of this component is to reduce the cost of cross border transport by streamlining, modernizing, simplifying and harmonizing the trade and transit procedures and the policies increasing professionalism of economic operators. This is expected to be realized by the following provisional list of sub-components:

a. An assessment of options for establishing a NSW facility;

[14] A grant has been obtained from the Global Road Safety Facility to cover the work in parts (a) and (b). This component will focus on the detailed design and implementation of the measures.

b. Technical Assistance to improve the MBS;

c. An assessment of the feasibility of the upgrading and modernization of border post facilities and traffic control; and

d. The upgrading and modernization of border post facilities at Songwe. Dedza, Mwanza, and Muloza border crossings.

The provisional cost estimate for these interventions is US$17.5 million.

Component 4: Implementation Assistance and Institutional Support This component will provide necessary project management and implementation assistance to the implementation unit(s), together with capacity building and training, and other priority studies. The capacity building elements reflected here are those relevant to environment and social management sector.

(a) The procurement of consultants to supervise the civil works and monitor the implementation of the Environmental and Social Management Plan (ESMP);

(b) The procurement of consultants (as necessary) to build/add capacity in certain defined areas in RA, MoTPW and to assist in the implementation of the project components; and

(c) The procurement of consultants to prepare the detailed design, Environmental and Social Impact Assessment (ESIA), supervision of the civil works and ESMP, and establishment of OSBP at Dedza and Mwanza Border Posts.

2.2.2 Beneficiaries

The beneficiaries of the project will encompass road users, passenger and freight, and their families, residents along the road corridor, tradable sectors of the economy and ultimately, consumers and producers both inside and outside the sub-region.

2.3 Institutional arrangements

The project proponent and the executing agency of the Programme is the Roads Authority (RA) who will be assisted by the Environment Management Unit (EMU), and by design and supervision consultants and other sector consultants to engage the Contractor and Sub-contractors in the implementation of the projects. To minimize potential environmental and social negative impacts, the projects will require the support of various institutions in the project area. In this instrument presents the actions and responsibilities for the ESMF implementation through the project cycle.

In regards of the reporting arrangements, RA’s Environment Management Unit (EMU) or Consultant's appointee to deal with environmental management will cooperate with other experts such as District Land Officers, District Valuers, Community Development Officers and District Environmental Officers to provide the Environmental and Social Planner at the RA with environmental reports of the project implementation as part of the progress reports and annual environmental monitoring reports.

Chapter 3: Environmental and Social Settings

3.1 Policy Framework

The Government of Malawi's commitment to environmental management and sustainable development is reflected in its three main environmental policy documents: the National Environment Action Plan (NEAP 1994), the National Strategy for Sustainable Development (NSSD 2002), and the National Environment Policy (NEP 1997). Furthermore, relevant policy developments in the sector ministries include: Transport; Industry; Water; Construction; Tourism; Wildlife; Forest; Agriculture; Land; Mining; Fisheries; National Parks and Wildlife; Energy; Gender; and Health.

3.2 Legal Framework

The overall legal framework for environmental planning and management in is laid down in the Environment Management Act (1996) and regulations made under this act. In addition the Public Roads Act (1968) and regulations made under it specifies the sector specific provisions for environmental planning and management in the road sector.

a. Provisions of the Environmental Management Act, 1996

Malawi has enacted the Environmental Management Act (EMA) 1996, to regulate environmental management issues and EIA requirements in the country. The EMA makes provision for the protection and management of the environment and the conservation and sustainable utilization of natural resources. Sections 24, 25 and 26 of the EMA provide the legal framework for managing the EIA process. The EIA is a requirement for any project prescribed under section 24 of the EMA.

Section 26 (3) of the EMA provides that "a licensing authority shall not issue any licence under any written law with respect to a project for which an environmental impact assessment is required under EMA unless the Director of Environmental Affairs has certified in writing that the project has been approved by the Minister under EMA or that an environmental impact assessment is not required under EMA." In this way, the Project Client will have to obtain an EIA Certificate first before commencing activities of the proposed sections of the road.

b. Environmental Impact Assessment Guidelines, 1997

The overarching regulations for any environmental assessment of projects in Malawi are the Environment Impact Assessment made under the EMA. The EIA guidelines outline the process for conducting EIA and to facilitate compliance by developers as outlined in the Environment Management Act, 1996. The guidelines also provide a list of prescribed projects to undergo mandatory EIA. The guidelines are used by developers who intend to carry out an EIAs as a reference document. The guidelines are a tool for integrating environmental concerns into development plans in both the public and private sectors. They provide important information to the EIA process to facilitate the requirement under section 29 of EMA that the developer (proponent) submits the EIA Report to EAD where the Technical Committee on Environment (TCE) provides the necessary advice in decision making process and makes recommendation for

approval to the National Council for the Environment (NCE). Every developer is required should comply with the processes set by these guidelines.

c. Regulation on Environmental Experts

A directory of recommended ESIA Experts was developed by the EAD and consequently approved by the National Council for the Environment (NCE). It is compulsory to assign an independent environmental expert to carry out environmental impact assessment studies. The expert must be on approved list. A list of registered environmental experts may be obtained from the EAD.

d. Environmental Standards

Any project must comply with existing Malawi environmental standards during the site preparation and construction phases as well as the operation phases of the road project. Currently the following standards have been issued under the EMA and the Malawi Bureau of Standards Act (1972):

- Water quality standards
- Standards for discharge of effluents
- Air quality standards
- Standards for emissions to air
- Noise and vibration standards
- Solid waste regulations
- Soil quality standards

Relevant standards may be purchased from the Malawi Bureau of Standards (MBS).

e. Others Environmental Law

The next table outlines other key policies and laws related to the Environmental Management Act.

Table N° 1: Other Existing Key Policies and Laws relating to Environmental Management Act

Act	Key elements	Implementing authority
National Parks and Wildlife Conservation Act (2004),	The Act protects wildlife and vegetation by restricting the utilization of wildlife to license holders. The use of sensitive wildlife habitats is restricted during certain times of the year or for specified periods.	Department of National Parks and Wildlife
Fisheries Act (2004)	The Act regulates annual catches and fishing periods. Specific regulations restrict some methods of fish harvesting as well as prohibiting dynamiting and poisoning.	Department of Fisheries
Mines and Mineral Act	The Act sets out government policy on all forms of mining and is supported by various regulations covering claims, prospecting rights, mining rights, and royalties. Mining license applicants are required to submit plans for environmental protection. Each industry is required to establish realistic resource-recovery standards and to adhere to them. Mining plans must be presented before operations begin.	Department of Mines
Local Government Act (1998)	Local authorities are empowered to enact bylaws regarding the protection of soil, agriculture, water supplies, and other natural resources. The act contains provisions to protect human health and regulate pollution.	Local Authorities

Source: Environment Management Unit (EMU) compilation, 2013

f. Environmental International Agreements

Malawi is a party to many international agreements on biodiversity, climate change, desertification, endangered species, ozone layer protection, and others, including:

- Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal (1989);
- Convention Concerning the Protection of the World Cultural and Natural Heritage, Paris (1972);
- Convention on Biological Diversity;
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, 1973);
- Convention on the Ban of the Import into Africa and the Control of Trans-boundary Movement and Management of Hazardous Wastes within Africa, Bamako, Mali (1991);
- United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (1994);
- Lusaka Agreement on Co-operative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora (1994);
- Montreal Protocol on Substances That Deplete the Ozone Layer (1987);
- United Nations Framework Convention on Climate Change (1983); and
- Vienna Convention for the Protection of the Ozone Layer;

g. Provisions of the Public Road Act, 1968

A number of provisions for environmental planning and management in the road sector were included in the Roads Act (No. 13 of 2007). The Environmental Guidelines for the Road Sector (2004) were issued under the Act and agreed with the EAD. These regulations complement the regulations made under the EMA and present the specific requirements for environmental assessment and management.

3.3 Institutional Frameowrk

3.3.1 Ministry of Transport and Public Works: Road Sector

The MoTPW is the main stakeholder in the road sector. The MoTWP formulates policies, sets standards, and specifications; defines the long-term strategic plans; and participates to the management of the executive agencies. As stipulated in the Government Instrument, the roles and functions of the MoTPW are:

- Formulation of policies, plans and strategies towards development, upgrading and Management of the Construction Sector covering short, medium and long term;
- Setting standards and Monitoring of quality compliance in Construction, Rehabilitation and Maintenance of Roads, Ferries, Bridges, and Government Buildings;
- Monitoring & Supervision of Construction, Rehabilitation and Maintenance of Roads, Ferries, Bridges, and Government Buildings;
- Supervision and Monitoring of preliminary and detailed designs of Trunk and Regional Roads;
- Monitoring, supervision and coordination of various activities of Agencies/Parastatals, Boards and Institutions which are under the Ministry;
- Sourcing of internal and external funds for financing of various projects under the Ministry;
- Supervision of axle load control and transport safety; and

– Human Resources development for Ministry's Employees at all levels.

All road sector responsible ministries, department, agencies etc. have overall responsibility to protect the environment while planning or executing road projects or managing road operations in accordance with the prescriptions in the Public Roads Act. However, particular responsibilities to protect the environment within the road Sector lies with the RA through the EMU that coordinates with EAD.

3.3.2 Malawi National Roads Agency: Road Authority

The Roads Authority was established by an Act of Parliament No. 3 of 2006 as a semi-autonomous agency under the MoTWP. Apart from the Act, RA is guided in its operations by other Acts governing organizations it interacts with in its day to day operations. It is the authority for the construction, rehabilitation and maintenance of national roads and other categories of roads that fall under other authorities such town and local assemblies.

The main objective of Roads Authority is to support the socio-economic growth and help reduce poverty through: promotion of trade; support for the economic sectors such as agriculture, mining, tourism, industry; and provision of access to social services such as health, education and recreation.

The roles and functions of RA are:

- Determination of what needs to be done on the road network;
- Planning for carrying out the required interventions, based on priority ranking;
- Engaging contractors to carry out the works;
- Supervising the works;
- Establishing and operating toll roads where feasible;
- Establishing and maintaining an appropriate databank for the national road network;
- Establishing and operating weighbridges and enforcing axle load control on national road network;
- Carrying out / commissioning research in support of the operations when necessary; and
- Advising the MoTWP on standards and specifications for road works.

In relation to its structure, a Chief Executive Officer (CEO) heads the agency, there are six functional Directorates: Maintenance, Construction, Planning and Design, Procurement, Projects and Management Services. In relation with the Regional Offices, there are 3 regions managed by Chief Engineers who report directly to the CEO.

3.3.3 Environment Management Unit

The RA established an environmental unit to provide overall policy and strategic guidance in environmentally sound road sector planning and management and to supervise coordinate and monitor the implementation of environmental legislation in the road sector.

The Environment Management Unit (EMU) serves as the road sector environment section in compliance with the prescriptions in the EMA, 1996 and its functions include:

– Advising on, and in collaboration with other bodies, implementing the policies of the Government on the protection and management of the environment in the road sector;
– Coordinating the activities related to the environment within the RA;
– Ensuring that environmental concerns are integrated into road sector's planning and project implementation in a way which protects the environment;

- Collaborating with other institutions or agencies, evaluate existing and proposed policies and legislation and recommend measures to ensure that those policies and legislation take adequate account of effects on the environment;
- Preparing and coordinating the implementation of environmental action plans for the road sector at the national and local levels as required under the EMA;
- Promoting public awareness of environmental issues associated with road projects through educational programs and dissemination of information;
- Conducting other functions as are necessary to comply with the purposes of the EMA;
- Undertaking analysis of environmental impact of sector legislation, regulations, policies, plans, strategies and programs through strategic environmental assessment;
- Ensuring that sector standards are environmentally sound;
- Overseeing the preparation and implementation of Environmental and Social Management Plan required for investments in the sector;
- Ensuring compliance with various regulations, guidelines and procedures issued by the Minister Responsible for the Environment; and
- Providing environmental advice and technical support to district level staff working in the road sector.

3.3.4 Environment Authority

The envisaged institutional framework for environmental management in the country includes the following levels of governance:

- The Minister responsible for the environment;
- The Office of the Director of Environmental Affairs (DEA);
- The National Council for the Environment NCE with its technical advisory committee the Technical Committee for the Environment (TCE);
- Sector ministries and their environmental sections; and
- Local government authorities (LGAs), they are: city, municipal, district, township, ward.

The EMA contains detailed descriptions of roles and responsibilities. A brief overview is as follows:

a. The Minister Responsible for the Environment

The Minister responsible for the environment is responsible for matters relating to environment, including providing the necessary policy guidance for promotion, protection and sustainable management of environment in Malawi. The Minister has the authority to issue EIA certificates (environmental permissions), which must be obtained by the Road Authority prior to any site preparations or constructions works for road projects. The Minister also has the authority to issue Environmental Stop Order in case of non-compliance with the environmental terms and conditions stated in the certificate, and to approve amendments to the EIA certificate based on application from the certificate holder.

b. The Office of the Director of Environmental Affairs

The Director of Environment Affairs (DEA) is appointed by the President of the Republic of Malawi. The main functions of the DEA are to promote integration of environmental considerations into development policies, plans, programs, strategies and projects; to advise Government on legislative and other measure for the management of the environment; to advice Government on the implementation of relevant international environmental conventions; to monitor and assess the overall environmental performance of sector ministries; and to prepare and issue annual state-of-the-environment reports.

c. The National Council for the Environment (NCE)

The objectives of the National Council for the Environment (NCE) are to undertake enforcement, compliance, review and monitoring of Environmental and Social Impact Assessment (ESIA) and to facilitate public participation in environmental decision making. The NCE is responsible for:

- Convening public hearings to obtain comments on the proposed project;
- Recommending to the Minister to approve, reject, or approve with conditions specific EIS (based on which the Minister will decide whether an ESIA certificate will be issued);
- Monitoring the effects on the environment of activities;
- Controlling the implementation of the Environmental and Social Management Plan (ESMP);
- Registering experts and firms authorized to conduct ESIA; and
- Promoting public environmental awareness in general.

d. The Technical Committee on Environment (TCE)

The TCE is a cross-sectoral committee set up to coordinate the implementation of the EMA and its regulations. It comprises members with experience from various field of environmental management in the public, private sector and the civil society. The committee advises the Minister responsible for the environment through the DEA on any matter related to environmental management. Its main functions include:

- Examining any matter that may be referred to it by the minister or any sector ministry relating to the protection and management of the environment;
- Reviewing and advise the minister responsible for the environment on any environmental plans, environmental impact assessment of major projects and activities to which environmental impact review is necessary;
- Reviewing and advising the minister on any environmental standards, guidelines and regulations;
- Receiving, reviewing and commenting on environmental impact reports regarding the protection and management of the environment; and
- Performing other environmental advisory services to the DEA as it may be necessary.

e. The Sector Ministries

According to the EMA, sector ministries are required to establish sector environmental sections headed by a sector environmental coordinator. For the road sector, this is implemented through the environment section of the RA. The local government authorities include the city councils, municipal councils, district councils, town councils, ward, and village. A District Environment Sub-Committee (DESC) is established for each jurisdiction with the responsibility to oversee the implementation of the EMA at the local level. The functions of the DESC include among other things conflict resolution, inspection, and examination of polluting activities, and general enforcement of environmental legislation.

3.4 General Environment and Social Characterization

3.4.1 Environment and Geographical aspects

Malawi is situated in southeastern Africa. It is wholly within the tropics; from about 9°30S at its northernmost point to about 17°S at the southernmost tip. The country occupies a thin strip of land in between Zambia and Mozambique protruding southwards into Mozambique along the valley of

the Shire River. In the north and north east it also shares a border with Tanzania. Malawi is landlocked and is connected by rail to the Mozambican ports of Nacala and Beira.

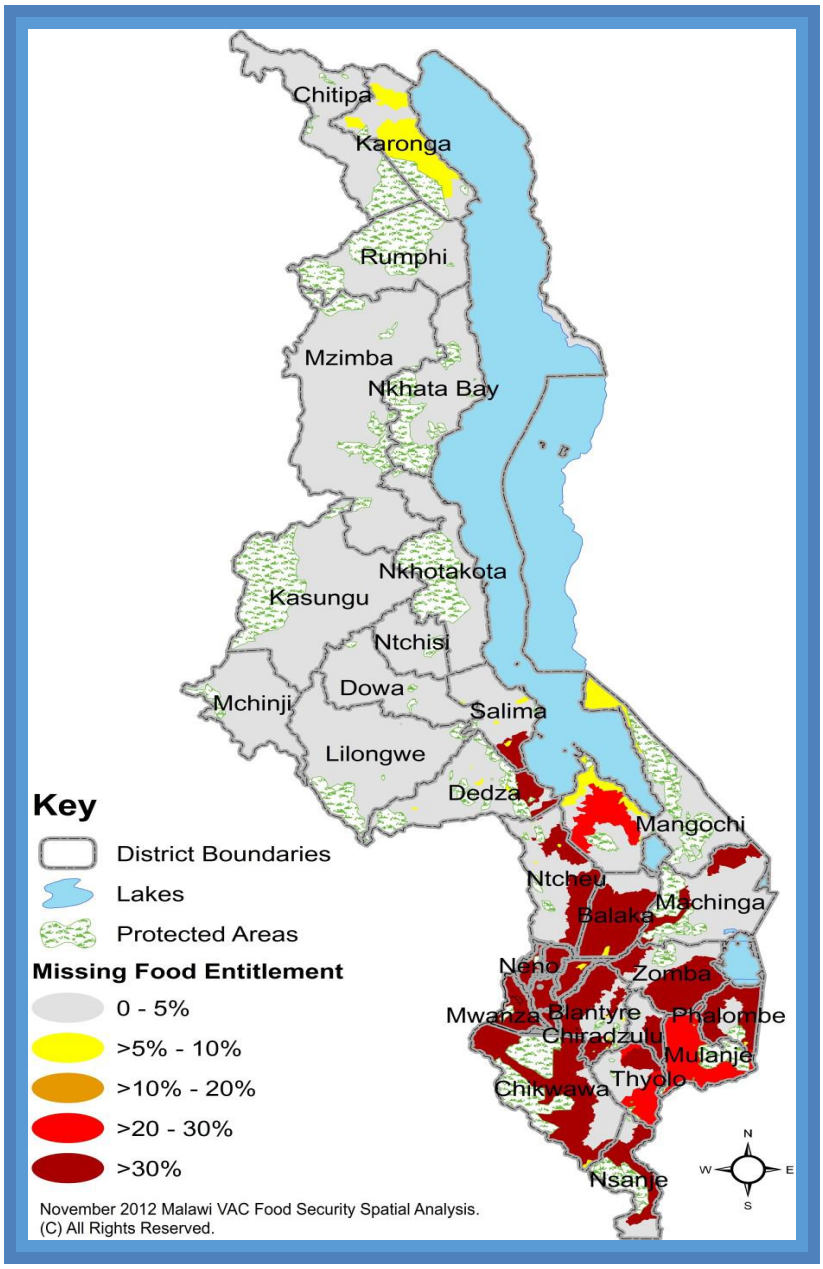
Figure No. 2: Map of Malawi

Source: Nations Online Project.

The Great Rift Valley traverses the country from north to south. In this deep trough lies Lake Malawi, the third-largest lake in Africa, comprising about 20% of Malawi's area. The Shire River flows from the south end of the lake and joins the Zambezi River 400 kilometers (249 mi) farther south in Mozambique.

West of the Great Rift Valley, the land forms high plateaus, generally between 900 and 1,200 meters (2,953 and 3,937 ft) above sea level. In the north, the Nyika Uplands rise as high as 2,600 meters (8,530 ft). The area to the west of the lake in northern and central Malawi has been categorised by the World Wildlife Fund as part of the Central Zambezian Miombo woodlands ecoregion.

Figure No. 3: Food Entitlement



Source: Nation on line Project

South of the lake lie the Shire Highlands, with an elevation of 600–1,600 meters (1,969–5,249 ft), rising to elevations of 2,130 and 3,002 meters (6,988 and 9,849 ft) at the Zomba Plateau and Mulanje Massif respectively. In the extreme south, the elevation is only 60–90 meters (197–295 ft) above sea level. The figure below shows areas designated as protected for environmental conservation and areas considered as vulnerable in terms of food security.

As shown, only some parts of Karonga (thus between Songwe and Karonga Township and a small section of the Chiweta –Bwengu) are project areas considered as vulnerable with between 5% and 10% of the population considered as food insecure. The other sections are however regarded secure interms of food and hence regarded as not vulnerable. No sections of the road pass through areas.

However, the Bwengu-Chiweta section cuts through a heavily forested hilly areas that are a home to *Branchystegia* tree species and a mammalian species and reptiles including monkeys and snakes.

Malawi is one of Sub-Saharan Africa's most densely populated countries. All government ministries and the Parliament are located in Lilongwe. Blantyre and Lilongwe remains Malawi's major commercial center and largest cities

Malawi's climate is generally tropical. A rainy season runs from November to April. There is little to no rainfall throughout much of the country from May to October. It is hot and humid from September to April along the lake and in the lower Shire Valley, with average daytime maximum around 27 to 29 °C. The rest of the country is warm during those months with a maximum temperature during the day around 25 °C. From June through August, the lake areas and south are comfortably warm, with daytime maxima of around 23 °C, but the rest of Malawi can be chilly at night, with temperatures ranging from 10–14 °C). Karonga in the far north shows little variation in temperature with maximum daytime temperature remaining around 25 to 26 °C (77.0 to 78.8 °F) all year round but is unusual in that April and May are the wettest times of the year due to strengthening southerly winds along the lake.

The total area of the country is 118,484 km², but this includes 24,404 km² of water surface, mainly composed of Lake Malawi, but there are other sizeable lakes, such as Lake Malombe, Lake Chilwa and Lake Chiuta. The land area is 94,080 km².

The country is dominated by Lake Malawi, which drains into the Zambezi River through the Shire River. As a result the whole of the country, except for one eastern district is part of the Zambezi drainage system. Lake Chiuta and the surrounding plain is drained by the Luchenza river, which is part of the Ruvuma River drainage system. Lake Chilwa, about 35 km south of Lake Chiuta is unusual as it has no outlet although when it overflows it flows into Lake Chiuta through a swampy plain. High rates of evaporation ensure that the lake seldom fills up – much of the lake is only 1 metre deep or less. Current environmental issues are deforestation; land degradation; water pollution from agricultural runoff, sewage, industrial wastes; siltation of spawning grounds endangers fish populations

Malawi also has diversity large, diverse populations of millipedes, terrestrial mollusks, and butterflies. The marine environment has more than 7,805 invertebrate species, and there are also about 789 species of freshwater invertebrates (mostly aquatic insects).

3.4.2 Demographic aspects

The population of Malawi is estimated at 16, 777,547. The estimates take into account the effects of excess mortality due to AIDS. This has resulted into lower life expectancy, higher infant mortality, higher death rates, changes in the distribution of population by age and sex than would otherwise be expected. The sex distribution ration is almost 1:1 with an approximated 52% females and 48% males. Population growth rate is 2.74% with a birth rate of 39.98 births/1,000 population (2013 est.). The death rate is 12.54 deaths/1,000. The urban population consitutes 15.7% of total population and rate of urbanization 4.2% per year. Infant mortality rate76.98 deaths/1,000 live births with a life expectancy at birth of 52.78 years. The population using improved water source is 83% and non-improved is 17%. Improved sanitation access is rated at 51% .

3.4.3 Poverty

According to demographic surveys the poor people are: (i) rural households; (ii) female-headed households, other households with less than two adult members, elderly, and handicapped persons;

and (iii) urban households. These groups are not mutually exclusive. The reasons for these categories are:

– *Rural households:*
  - Low agricultural productivity, declining soil fertility, and environmental degradation;
  - Lack of access to land, land fragmentation, and insecurity of land tenure;
  - Lack of access to markets and absence of rural commercial activity and alternative income-earning opportunities;
  - Low-quality education, lack of access to education, and high cost of education;
  - Poor health services and health standards and rise in HIV/AIDS incidence negatively impact productivity;
  - Poor nutritional intake;
  - Lack of access to low-cost capital or micro-credit or micro-grants;
  - Lack of access to affordable and sustainable household energy sources; and
  - Vulnerability.

– *Female-headed households:*
  - Shortage of household labor;
  - Declining soil fertility;
  - Many women have to take care of unemployed/unemployable husbands, dependent parents, and dependent orphans;
  - Low education attainment, poor access to land and credit, limited paid employment opportunities; and
  - Poor social services, such as water, health, education, and more.

– *Urban poor:*
  - Rapid increase in urban population;
  - No employment opportunities, particularly among poorly educated young people;
  - Poor basic social services and infrastructure;
  - Lack of housing;
  - Lack of land; and
  - High food prices due to low agricultural productivity, high transport costs, and restrictions on petty trade.

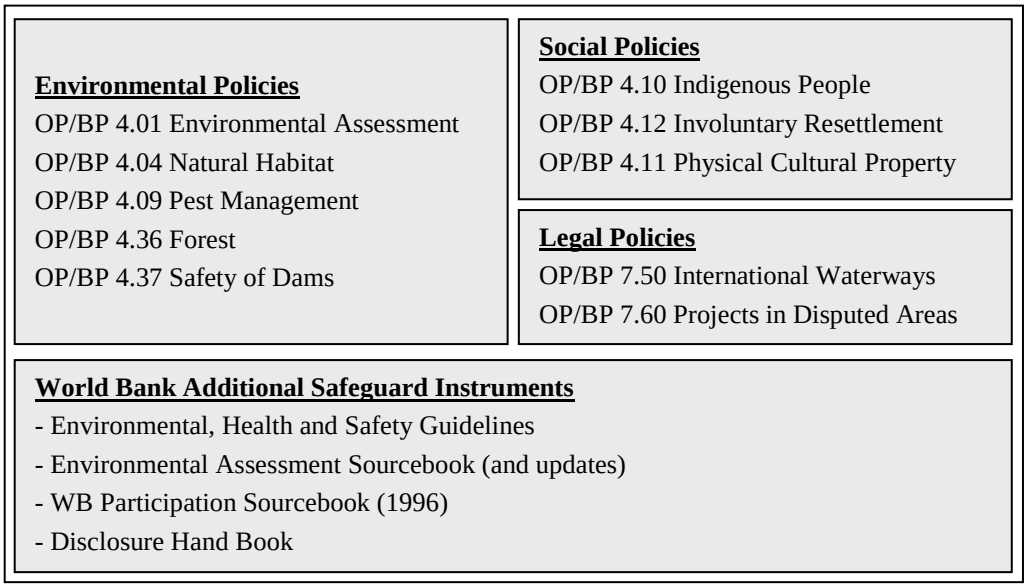
Malawi does not have a groups of people considered as indigenous. One of the reasons is that the country is overpopulated thereby forcing intertribal social interactions. There are a variety of religious groups and a lot of intermarriages. This has facilitated cultural value exchanges among groups.

Chapter 4: World Bank Safeguard Policies

4.1 Description

To ensure the social and environmental sustainability of the projects, the World Bank developed its Safeguard Policies, divided in environment, social, and legal areas (Figure No. 4). Likewise, the World Bank has a Public Disclosure Policy that is of cross-character and applies in all the Safeguards Policies.

Figure N° 4: World Bank Safeguard Policies



The Safeguard Policies pursue three objectives: (i) ensuring that environmental and social issues are evaluated in the preparation and decision-making process; (ii) reducing and mitigating the environmental and social risks of Bank-financed programs or projects; and (iii) providing mechanisms for consultation and information disclosure.

According to the agreements between the GoM and the World Bank, the RA will comply with all the Safeguard Policies in the projects or activities funded under the World Bank. A complete description of the World Bank's safeguards and their triggers can be found on the Bank's official Web site, www.worldbank.org.

4.2 Safeguard Policies triggered by the Programme

In infrastructure and road projects, the environmental and social Safeguard Policies that commonly triggered are:

- OP/BP 4.01 Environmental Assessment
- OP/BP 4.11 Physical Cultural Property
- OP/BP 4.12 Involuntary Resettlement

More detail information about these policies is presented in the **Annex 2**.

The next Table No. 2 presents the common settings in which the safeguards are triggered and generic directions to comply with them. The policies that apply to each specific project will be decided on a case-by-case basis during the project cycle.

Table N° 2: Social and Environmental Safeguards commonly activated in the road sector

Safeguard Policy	Trigger settings and requests
Environmental Assessment (OP/BP 4.01)	This safeguard is typically triggered in projects where the work will affect, temporary or permanently, the natural environment and/or society, through direct, indirect, or cumulative impacts. The project will develop the Environmental and Social Impact Assessment (ESIA), Environmental and Social Management Plan (ESMP), and others required by national law and the Bank's guidelines to ensure the social and environmental sustainability of the project and to obtain the respective environmental permissions.
Natural Habitats (OP/BP 4.04)	This safeguard is most likely triggered for projects located in a protected area or in a critical area from an environmental perspective. Depending on the negative impacts to the natural habitats (flora and fauna), these projects will require special studies to protect or preserve the species identified at risk of being affected. If a project can cause irreversible damages, it will be excluded from financing.
Indigenous or Vulnerable Groups (OP/BP 4.10)	This policy is triggered when a project is located in recognized areas of indigenous or vulnerable groups, where a project benefits or affects these communities. The criteria to define these vulnerable groups are included in the Bank's OP/BP 4.10. In these cases an Indigenous or Vulnerable Group Plan (VGP) is required, in order to ensure an adequate consultation process and participation of these groups.
Physical Cultural Property (OP/BP 4.11)	This safeguard might be triggered during projects constructed in zones of recognized archaeological/cultural/physical potential. Investigations, Rescue, and the Chance Finds Procedures Plan are the most common instruments required in cases when the Policy is triggered.
Involuntary Resettlement (OP/BP 4.12)	This safeguard is triggered when projects require the relocation of people or compensation is required because of project impacts on livelihoods or natural resources. The affectation could be minimal or substantial depending on whether houses or productive lands (legal or illegal) are impacted. These cases require a Resettlement Action Plan (RAP) developed in accordance with the Bank's guidelines.

In accordance with the Bank's Public Disclosure Policy, generally a Communication and Disclosure Program is required to present all the environmental and social documents developed for the projects (ESIAs[15], ESMPs[16], RAPs[17], or others) as part of the participation and consultation process.

[15] ESIA: Environmental and Social Impact Assessment
[16] ESMP: Environmental and Social Management Plan
[17] RAP: Resettlement/Compensation Action Plan

Chapter 5: Environmental and Social Impacts in the Road sector

This chapter presents general information about the main environmental and social impacts, the prevention, mitigation and compensation measures, and the monitoring activities in order to assure good environmental and social practices during the projects execution. The detail of this information is presented in the **Annex 3**.

5.1 Identification of the environmental and social impacts

The main environmental and social negative impacts could affect the next elements: a) Effects related to the road sitting; b) Social effects; c) Loss of ecological and productive values; d) Hydrological and water resources; e) Traffic impacts; f) Air, water and noise pollution; and g) Effects Post project maintenance.

a. Effects related to the road sitting. Sitting of a road is the most critical decision in construction.

b. Social effects. The most important effects in the social aspercts are: local uncertain; severance and social disruption; disturvance to existing properties frontage, or public utilities; resetlement (Adverse socio-economic impacts on both those resettled and on the host population, conflict between those resettled and the host population, and adverse impacts on the environment in and around the resettlement area); Unrest and dissatisfaction over distribution of labor opportunities and others; Disease risk associated with workers in labor camps; impacts on health and social well-being of local communities; labor camp may become a permanent settlement; Population increase as a result of immigration; hazar when quarry or pits is abandoned; aesthetic visual impacts of quarries and borrow pits; Aesthetics visual of right of way on landscape; Destructiuon or lacking-in of archeological, historic and cultural values;

c. Loss of ecological and productive values. The main impacts are: Loss of important species and productive values; Loss of roadside vegetation; Loss of riverside vegetation; Spoil disposal leading to loss of habitat; Loss of roadside water supplies; Disruption to groundwater supplies; Disruption to animal migration; Impacts on local resources through demand for fuel, food and building materials; Impacts on local wildlife through recreational activities by workforce; Post construction increase in harvest of environmentally sensitive products; Introduction of plant and animal perst; and loss of agricultural land; Impediment on mineral resources exploitation.

d. Hydrological and water resources. The mian negative impacts are: Affect of sediment on water bodies (increase turbidity, setting of sediments on the botton of the water bodies, settling of sediment can have a wide range of impacts, interference with acuatic organism and sediment particles in the water can harm the gills of fish and block the filtering mechanisms of filter-feeders such as mollusks); Erosion and sedimentation; Impacts on drainage; Removal of material from river and stream beds; Erosion due to changes in dreinage; and spoil disposal leading to sedimentation.

e. Traffic impacts. The main impacts are relñated with: Traffic impacts of movilazong equipment and movement during the construction; Traffic flow disruption due to the road bed construction; and Traffic accidents on complete road.

f. Air, water and noise pollution. The main impacts are related with: Water pollution from sewage and rubbish disposal; Oil pollution during the construction; Run-off or slumping of stockpiles into stream; Run-off of sediment-laden or polluted water from quarries and pits; Highway run-off pollution; Accidental spills of hazardous material during operation; Noise pollution in nearby settlements and wildlife areas; Vibration impacts during construction phase; Noise impacts from road operation; Air pollution during construction phase; and Dust and air pollution from road operation.

g. Post project maintenance. Impacts due to poor maintenance.

5.2 Environmental and Social measures: Environmental and Social Management Plan

The RA should request an Environmental and Social Management Plan (ESMP) for every road project, irrespective of whether an ESIA has been carried out or not in order to make sure that the "Environmental Code of Practice for Road Works (ECPRW)", is followed and, in case an ESIA was carried out, to ensure that mitigation measures proposed are implemented satisfactorily and timely. If an ESIA is carried out for a project, the ESMP will form an integral part of the ESIA. If not, the Roads Authority assisted by an environmental consultant, should prepare the ESMP.

The ESMP captures the critical project-specific issues to be managed and ensures that commitments made during the planning phase are incorporated into the design, construction and operational phases of the project. The ESMP presents the implementation responsibilities during the construction and operation phases. The ESMP is prepared using the following information:
- The findings and recommendations of the EIA study;
- The Environmental Code of Practice for Road Works;
- Relevant environmental standards;
- Other relevant pieces of legislation;
- Other government agency input; and
- Outcomes of community consultation.

The implementation plan for management of environmental and social impacts should be structured according to the following phases of the road project:
i. Measures to be incorporated into the detailed design of the road;
ii. Measures to be taken during construction; and
iii. Measures to be taken during operation of the road.

The ESMP also should include an Environmental Emergency Plan in order to identify critical incidents and vulnerable areas and populations during construction and operation of a road; and Environmental Monitoring Plan, in order to follow-up the environmental and social measures during the construction phase (but it may also be extended in some cases to the operational phase).

5.3 Environmental and Social Monitoring Plan

Monitoring is the long-term process that normally begins at the start of the project and should continue throughout the life of the project. Its purpose is to establish benchmarks so that the nature and magnitude of anticipated environmental impacts are continually assessed. Therefore, monitoring involves the continuous or periodic review of mitigation activities to determine their effectiveness. Consequently, trends in environmental degradation or recovery can be established and previously unforeseen impacts can be identified and dealt with during the project road's life.

The Monitoring Plan included in the ESMP specifies the type of monitoring, who will do it, how much it will cost to carry out monitoring and what other inputs, such as training, are necessary.

Chapter 6: Environmental and Social Management in the Road Authority

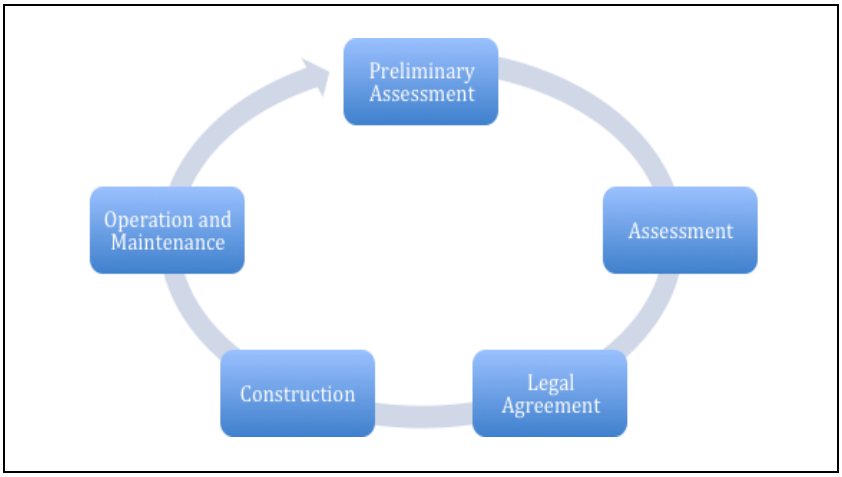
The overall purpose of this section is to present, on the basis of the Malawi environmental law and the World Bank's Safeguard Policies, some methodologies, instruments and internal formats and procedures for the environmental and social management that should be implemented in the project, specifically of the Environment Management Unit (EMU) is the responsible for the application of these methodologies, instruments and formats during the project cycle, to ensure the environmental and social sustainability of the projects that will be financed in compliance with national law and the Bank's Safeguard Polices.

Before presenting the methodologies, instruments and internal formats, it is important to define the project cycle and the role and responsibilities of the stakeholders that is involve in the project cycle.

6.1 Project Cycle

The environmental and social management are in the function of the project cycle and the role/responsibility of project stakeholders. The project cycle has five stages: (i) identification and preliminary assessment; (ii) assessment or appraisal; (iii) legal agreement; (iv) construction; and (v) operation or maintenance. The stakeholders involved include: RA, Environmental Affairs Department, Local Councils, Constructors, and the World Bank.

Figure No. 5: Project Cycle



6.1.1 Identification and Preliminary Assessment

The first stage of the "project cycle" is where it is very important to include in the projects the environmental and social variables. The Environment Management Act 1996 stipulates that all infrastructure projects have to undergo the EIA process, which starts with project identification,

followed by preparation of the project brief that is submitted to the Director of Environmental Affairs with registration fees.

The first tool **"Environmental and Social Screening Form (ESSF)"** should be apply in order to identify the Environmental and social risk level of the project, the studies required, the estimated budget and the requirements in terms of consultation and public participation.

6.1.2 Assessment or Appraisal

In this stage, once the project has been classified and categorized, and the Terms of Reference (ToR) has been prepared by the Environment Affair Department (EAD), the RA prepares the studies required by the national law and the World Bank Safeguards Policies. The EAD reviews the environmental study report with the assistance of the Technical Committee on Environment (TCE) and policy guidance of the National Council for the Environment (NCE). The Minister responsible for environment will issue an environmental certificate after receiving recommendations from NCE. The RA has to take the project through the approval process.

6.1.3 Legal Agreement

It is important to include all the environmental and social requirements in the legal contracts to ensure implementation of the environmental and social measures and action during project execution.

6.1.4 Construction

During construction, it is important to monitor implementation of the environmental and social measures and actions included in the plans (ESMP, RAP/ARAP and others). For these activities the EMU should prepare the second internal tool during this stage **"Environmental and Social Monitoring Report (ESMR)"**. This tool should be applied each time that the responsible of the project follow-up and supervision. Once the project is done, the EMU should prepare the third tool for the environmental and social management **"Environmental and Social Final Report (ESFR)"**. RA should approve this last tool before the project closing.

6.1.5 Operation and Maintenance

During project operation and maintenance, it is important to monitor environmental and social conditions to ensure that operational activities are not affecting the environment or surrounding communities in an adverse manner. Chapter 7 presents guidelines for the monitoring and follow-up of environmental and social aspects during the operation phase.

6.2 Roles and Responsabilities of the Stakeholders

6.2.1 The Road Authority

The Roads Authority (RA) is responsible for the environmental and social management of the road component of the Programme. The instruments that ensure the environmental and social sustainability of the projects and compliance with environmental and social law and the World Bank Safeguard Polices is this Environmental and Social Management Framework (ESMF) and the Resettlement Management Framework (RMF).

Specifically the responsibility for environmental and social management in the RA rests with the Environment Management Unit (EMU). This unit is responsible for applying the present document and the RMF.

6.2.2 Environment Affairs Department (EAD)

The EAD is the national institution under the Ministry of Environment and Climate Change Management, responsible for overseeing issues concerning environment and natural resources management by among other things ensuring compliance with the national environmental law. The main evidence of compliance with the national environmental law is the Environmental Certification that is approved once the developers complete the environmental and social due diligence process and reports of compliance from inspections and audits.

The EAD has decentralized structure with Environmental District Officers and Environmental Inspectors at in local councils who are responsible for on-the-ground monitoring of implementation of mitigation measures or other activities of the private operators. Therefore, regular and intrusive monitoring will have to be carried out at the district level, and the EAD will oversee this process. The EAD will also provide periodic oversight to ensure no adverse cumulative impacts from project activities at the national level, and will provide oversight and technical assistance to the districts.

Therefore, EAD will perform three critically important roles as follows:

- Review, clearance, and approval of the operators ESIA process for Category A and B projects;
- Ensure that district staff have the capacity to carry out monitoring; and
- Oversight of monitoring activities.

The EAD delegates in the Districts are responsible for:

- Receiving, reviewing, commenting on, and requiring revisions where necessary for Category C projects' ESMP, prior to issuance of the license from the regulator and financing;
- Regular and intrusive monitoring during planning, implementation, construction, operations, and maintenance stages of the project;
- Preparing periodic monitoring reports on operator activities at all stages of operations and regularly sending these reports to the EAD for compiling and monitoring of cumulative impacts; and
- Issuing directives to project operators consistent with national laws on environmental requirements.

6.2.3 Construction

The constructors are the parties responsible for ESMP and RAP/ARAP implementation to ensure adequate environmental and social management during construction.

6.2.4 World Bank

The World Bank is responsible for follow-up projects compliance with its Safeguard Polices. If the project has been classified as HIGH environmental and social risk (Category A), the project requires the Bank's "no objection" at different stages of the project cycle.

6.3 Methodologies for the environmental and social management

This sub-chapter shows the 4 key aspects for the internal environmental and social management: a) Environmental and social preliminary assessment; b) Environmental and social studies required by the national law and the World Bank Policies; c) Environmental and social estimated budget; and

d) Public participation and disclosure mechanism. Additionally, to obtain all the previous information, internal tools were design in order to facilitate and systematize the information generated.

6.3.1 Environmental and Social Preliminary Assessment

Prior to the formal Environmental and Social Assessment process, it is important to determine the **"environmental and social risk level"** of each project. This environmental and social risk level should include a review of the Bank's environmental and social safeguards. To determine the risk level is necessary to analyze the magnitude, scope, and location (sensitive areas) of the proposed project. The result of this analysis will define the studies and budget required to comply with the national law and the WB Safeguards Policies. To define the environmental and social risk level, the EMU should carry out the following methodology, comprising five (5) steps:

Step 1: Magnitude of road project

The magnitude of a road project depends of hierarchy of the road (Primary or Regional road, Secondary or District road, Municipal or Rural road)); and the scope of the work that will be executed (new road, reconstruction, improvement, rehabilitation and maintenance).

Hierarchy of Roads:

- **Primary or Regional road**: A road of strategic importance for the overall interest of the national and international economy and 30 meters measured on each side from the center-line of the road; including a) road connecting the national capital to the provincial and special zone capitals, b) road to international borders, c) road of importance with regard to socio- economic and national defense or security purpose;

- **Secondary or District road:** A road of importance for the economic, political, socio-cultural development and for the national defense and security purpose at the provincial level, 18 meters measured on each side from the center-line of the road; including a) inter-provincial road b) road connecting a provincial capital to district centers, river ports, tourist and important historic sites;

- **Municipalities or Rural road**: A road connecting villages to villages and to various production and service centers of the village, 9 meters measured on each side from the center-line of the road;

Scope of Works:

- **New road constructions**, i.e. new roads, by-passes, and realignment of existing roads.

- **Upgrading**, i.e. adding new lanes and changing of road surfaces, widening lanes and shoulders, adding extra lanes in steep slopes/inclines, improving curves, and strengthening bridges.

- **Rehabilitation**, i.e. improving drainage, slopes, embankments and other structures, strengthening of pavements, complete resurfacing and recuperating civil works.

- **Maintenance** that requires either opening of new borrow pits or quarries, or establishment of labor camps in an environmentally sensitive area.

Matrix No. 1 defines the first classification of the road as a function of the Magnitude of the works:

Matrix N° 1
Environmental and Social Classification on function of the MAGNITUDE

Scope of road works	Hierarchy of the road		
	Regional	District	Rural
New Road	**I**	**I**	**II**
Upgrading	**I**	**II**	**II**
Rehabilitation	**II**	**II**	**III**
Maintenance	**III**	**IV**	**IV**

This first environmental and social classification gives a first result for the environmental and social risk level according to the Magnitude of the road project.

Step 2: Environment Site sensitivity

To define the level of the environment site sensitivity in the project area (LOW, MODERATE or HIGH), the following table can be used as a checklist to assess potential issues in relation to the environmental safeguards.

Table No. 3: Environment Site Sensitivity Checklist

Sensitivity	Description	Trigger
HIGH	1.1 Protected areas in the DIA (National Parks, Forest Reserve, etc.)	☐
	1.2 High danger of environment degradation (deforestation, hunting, others)	☐
	1.3 Sensitive or critical ecosystem in the DIA (wetlands, mangrove swamps, primary or secondary forests, and others)	☐
	1.4 Mountainous topography (>35% of slope)	☐
	1.5 Vulnerable areas to natural disasters (floods, earthquake, and others)	
	1.6 Presence of places of significant cultural and historical interest in the DIA	☐
		☐
MODERATE	2.1 Protected Areas in the IIA or in buffer zones	☐
	2.2 Moderate danger of environment degradation (deforestation, hunting, others)	☐
	2.3 Sensitive or critical ecosystems in the IIA (wetlands, mangrove swamps, primary or secondary forests, and others)	☐
	2.4 Wavy topography (15-35% of slope)	☐
	2.5 Moderate risk to natural disasters (floods, earthquake, and others)	
	2.6 Presence of places of cultural and historical significance in the IIA	☐
		☐
LOW	3.1 Intervened areas out of protected areas (national parks, or buffer areas)	☐
	3.2 Low danger of environmental degradation (deforestation, hunt, and so forth)	☐
	3.3 No sensitive or critical ecosystem areas in the direct influence area (wetlands, mangrove swamps, primary or secondary forests, and others)	☐
	3.4 Flat topography (<15% of slope),	☐
	3.5 Zones at low risk to natural disasters (floods, earthquake, and others)	
	3.6 Absence of places with cultural and historical significance	☐
		☐

DIA: Direct influence area; **IIA**: Indirect influence area

If at least one setting is high, the site sensitivity of the entire Project is **HIGH**; if no setting is in high sensitivity but at least one setting is in moderate, the site sensitivity is **MODERATE**; and if no high and moderate sensitivities are indicated, the site sensitivity is **LOW.**

Step 3: Environmental risk level (Category)

The environmental risk level is in function of the project magnitude (Step 1), and the environment site sensitivity (Step 2). Applying the next Matrix obtains this environment risk level:

Matrix N° 2
Environmental Risk Level or Category

Project Grade	Site Sensitivity		
	High	Moderate	Low
I	A	A	B
II	A	B	B
III	B	B	C
IV	B	C	C

Classification A: Those projects with HIGH environmental risk, because the road area of influence presents high level of sensibility and the civil works are of such a magnitude of which they can alter the natural environment, biodiversity, and his cultural property.

Classification B: Those projects with MODERATE environmental risk, because the road area of influence presents moderate level of sensibility, nevertheless the civil works are not of big magnitude. The environmental impacts are easily identifiable.

Classification C: Those projects with LOW environmental risk. The natural environment, the biodiversity, and the cultural property is not in risk.

Step 4: Social risk level:

The "social risk level" depends if a project construction affect people (house or land) or if the project will benefit or affect vulnerable or ethnic groups (indigenous). The **SOCIAL SITE SENSITIVITY** might be HIGH, MODERATE or LOW:

- **HIGH social risk level**: Project is likely to have a significant adverse impact on resettlement/compensation or/and vulnerable groups.

- **MODERATE social risk level:** Project is likely to have a significant adverse impact on resettlement/compensation or vulnerable groups.

- **LOW social risk level:** No resettlement/compensation and vulnerable groups in the project influence area

Step 5: Environmental and Social risk level:

As a result of the Step 3 and 4, the final clasification of the **environment and social risk** could be:

- Clasification A + High or Moderate SOCIAL risk level
- Clasification B + High or Moderate SOCIAL risk level
- Clasification C

In order to facilitate the application of this methodology, section 6.3.5 presents the internal tool (Environmental and Social Screening Form – ESSF) designed to apply this methodology during the project preliminary assessment (screening).

6.3.2 Environmental and Social estimated budget

It is important to know, at this preliminary stage, the estimated environmental budget for the ESMP implementation, in order to include this in the total budget of the project. The budget estimated amount is also a function of the environmental risk level classification.

Matrix No. 3 is used to estimate the percent (of the total project investment) for each environment risk level.

Matrix N° 3
Estimated Environmental Budget for the ESMP

Project Pre-classification	Environment Site Sensitivity		
	High	Moderate	Low
I	6%	5%	4%
II	5%	4%	3%
III	4%	3%	2%
IV	3%	2%	1%

6.3.3 Environmental and Social Studies

As mention in Chapter 7 (Environmental Assessment Process), the type and scope of environmental studies depends on the environmental Category of the national law and the Bank's classification in terms of the environmental and social risk level. Separate summaries of the specific environmental studies required by Malawian national law and the World Bank's Safeguards Policies as a function of the environmental and social risk level are as follows:

a. Environmental and social studies required by Malawian national law

The environmental studies required by Malawian national environmental law are as follows:

- **Category A**: Environmental and Social Impact Assessment (ESIA);
- **Category B**: Environmental and Social Management Plan (ESMP); and
- **Category C**: Environmental Guidelines of the Road Sector[18]

A detailed explanation for, and content of, each of these studies is presented in Chapter 7 (Environmental Assessment Process), and **Annex 4** present guidelines to prepare the ESIA (**Annex 4.1**) and the ESMP (**Annex 4.2**) reports. In regards of projects classified as C, requires the application of the Environmental Guidelines of the Road Sector developed (2004) summarized in the Annex 3. The Environmental Guidelines document is expecting to be review and up-date with this Programme as part of institutional strengthening component.

[18] This instrument was developed in 2004 and is expecting to up-date as part of the environmental and social strengthening.

b. Environmental and social studies required by the Bank's Safeguard Policies

If any additional safeguard issues are identified, it will be required specific requirements to comply with the World Bank Environmental and Social Safeguard Policies, as follows:

- If the Natural Habitat Safeguard Policy (OP/BP 4.04) is triggered, a special analysis of the specific natural habitat or species should be necessary in order to assure that the project will not affect irreversibly that habitat and if the project is viable from the environmental point of view, is necessary to identify specific measures to prevent, mitigate, and/or compensate, the potential negative impacts. This specific study may be part of the ESIA document.

- If the Involuntary Resettlement Safeguard Policy (OP/BP 4.12) is triggered, and the Project Affected People (PAPs) is more than 200 people, a full Resettlement Action Plan (RAP) should be develop during the assessment process; or if the PAPs are less than 200 people, and Abbreviated Resettlement/Compensation Plan (ARAP) should be developed. The guidelines and contents of these instruments are in the Compensation and Resettlement Guidelines (CRG).

- If the Cultural Property Safeguard Policy (OP/BP 4.11) is triggered, is necessary to include as part of the ESIA document, an specific study about this potential negative impact and prepare an specific Plan to prevent, mitigate and/or compensate any potential impacts. Chance Find Procedures is presented in the **Annex 5-a**.

- Finally, to comply with the Bank's public consultation and disclosure policy, a Public Consultation Plan (PCP) should be incorporated into the ESMP. The guidelines for preparing a PCP are presented in **Annex 5-b.**

6.3.4 Public participation and disclosure mechanism

The projects should contain an element of dialogue with local actors, including the community, during the phase of evaluation, to inform them on the purpose of the project and the potential environmental and social impacts (positives and negatives). The required quantity and depth of this type of dialogue depends of the environmental and social categorization. The guideline for the participation and disclosure is included in the **Annex 6**.

Projects Classified A: HIGH level of environmental and social risk

Projects with Classification "A" designation will be required to carry out at least two dialogue/communication exercises with local actors, including the community. The first dialogue is to discuss the purpose of the project and to collect information on the population affected or who benefit from the project. In the second dialogue, the results of the environmental and social studies will be presented to the communities.

In case of the presence of ethnical groups, appropriate methods and procedures of dialogue that guarantee their participation should be designed.

Projects Classified B: MODERATE level of environmental and social risk

For these projects it is required to carry out at least one dialogue/communication exercise with local actors, including the community. This dialogue should include the following aspects: a) purpose of the project; b) results of the environmental evaluation; and c) presentation of the complementary studies required, where applicable.

Projects Classified C: LOW level of environmental and social risk

Although a dialogue process is not required, it will be necessary to maintain a good information system to keep the community informed about the project and its progress.

b. Disclosure required in function of the environmental and social categorization

All the projects should include a strategy for public information disclosure, in order to keep the general public and the actors involved in the project informed about its purpose and the potential environmental and social impacts. The disclosure of information will be done through the Internet and using the local media to reach the local community.

The information that will be published should contain: i) basic information about the project; ii) schedule of activities before the bidding process; iii) environmental and social categorization; iv) terms of reference of the environmental and social studies; v) list of enterprises participating in the bid process; vi) the summary and the results of the community dialogue; vii) the environmental and social studies developed; viii) in the cases that apply, the Resettlement Action Plan; Vulnerable Group Plan and Heritage and Cultural Resources Plan; ix) any another important study that have done on the project; x) the announcement of the constructor; xi) the contracts with environmental and social commitments to be executed during the construction; and xii) annual progress reports.

In addition, the following information should also be made public in adequate local media: i) the place, date and participants in the dialogue, ii) the rough draft of the study of environmental impact and iii) the rough draft of the project plans to ensure that the participating local actors to the dialogue have the adequate information with sufficient advance notification in order to be able to participate effectively in the dialogue.

6.4 Tools for the environmental and social management

A series of environmental and social tools (formats) have been designed for the use of RA, specifically for the Environment Management Unit (EMU), to ensure adequate environmental and social management and that systematic reporting and documentation, as a product of this management, is generated throughout the project cycle.

The tools that should be utilized during the project cycle are: a) Environmental and Social Screening Form (ESSF); b) Environmental and Social Monitoring Report (ESMR); and (iii) Environmental and Social Final Report (ESFR). **Annex 7** contains formats for these internal management tools.

6.4.1 Environmental and Social Screening Form (ESSF)

The ESSF is the first management instrument that the EMU will use during the first stage of the project cycle (Identification Stage) to analyze the potential environmental and social risks and determine the environmental and social risk level, to identify the environmental and social studies required in order to comply with Malawian national and the World Bank Safeguards Policies, and to gauge the estimated budget.

The format of this instrument is presented in **Annex 7.1**.

6.4.2 Environmental and Social Monitoring Report (ESMR)

The ESMR is the second environmental and social management tool that should be developed by the EMU during works execution, to follow up and monitor the implementation of the

environmental and social mitigation measures identified in the ESMPs, RAPs and others reports, which are prepared for the specific projects. The ESMR contains basic information about periodic monitoring field visits, the technical staffs that visit the project, the environmental and social aspects observed during the site visit, and recommendations for the constructor.

The format of this tool is presented in **Annex 7.2**.

6.4.3 Environmental and Social Final Report (ESFR)

The ESFR is the third and final environmental and social management instrument that should be developed by the EMU once the works done, in order to review the compliance of all the environmental and social measures identified in the ESMPs, RAPs, and others instruments developed for the specific project.

The format of this instrument is presented in the **Annex 7.3**.

Chapter 7: Environmental Assessment Process

This Chapter presents a summary of the main aspects of the Environmental Assessment Process presented in the **"Environmental Impact Assessment Guidelines"** developed by the Environmental Affairs Department (EAD).

7.1 Objectives and Functions

The general objective of the Environmental and Social Impact Assessment (ESIA) process in the road sector is to identify the positive and negative impacts of a proposed road project on the natural and human environment and then to formulate appropriate remedial/mitigation measures to avoid or minimize adverse negative impacts and to enhance beneficial impacts. The ESIA process may help develop more environmentally friendly road projects by reducing negative environmental impacts through alternative approaches, design modifications, and remedial measures. The application of ESIA to road construction, upgrading, improvements, rehabilitation, and maintenance and to transport operations is a preventive strategy.

The specific objectives of the environmental assessment process for a road project are:

- Identify potential environmental impacts and document that a thorough and site-specific mapping of the project environment has been carried out;
- Ensure environmentally sound and socially fair planning and implementation of the project;
- Ensure that stakeholders/potentially affected people are informed about the project and that their viewpoints and concerns are considered in the planning and implementation of road project; and
- Reveal the environmental and socio-economic background for an informed decision-making regarding the project.

The functions of the environmental assessment process are to:

- Clearly describe a project, including alternative project proposals;
- Describe the baseline conditions for the project environment;
- Identify potential environmental and socio-economic impacts;
- Propose mitigation measures to minimize negative impacts and to enhance positive impacts;
- Improve and optimize the project;
- Prepare Environmental and Social Management Plans which "translate" mitigation into an operational plan that can be implemented by the Roads Authority and the contractor;
- Present to managers and decision-makers a clear assessment of potential impacts that a project (or a strategic level initiative) may have on environmental quality;
- Provide adequate information to the public and obtaining vies from the public;
- Support authorities in making good decisions; and
- Apply to a project (or a strategic level initiative) methodology that assesses and predicts impacts and provides the means to prevent and mitigate impacts and to enhance benefits.

The environmental assessment process is not only a decision-making tool, but also provides a specific forum to systematically undertake public consultation in a manner that allows stakeholders to have direct input to the environmental management process.

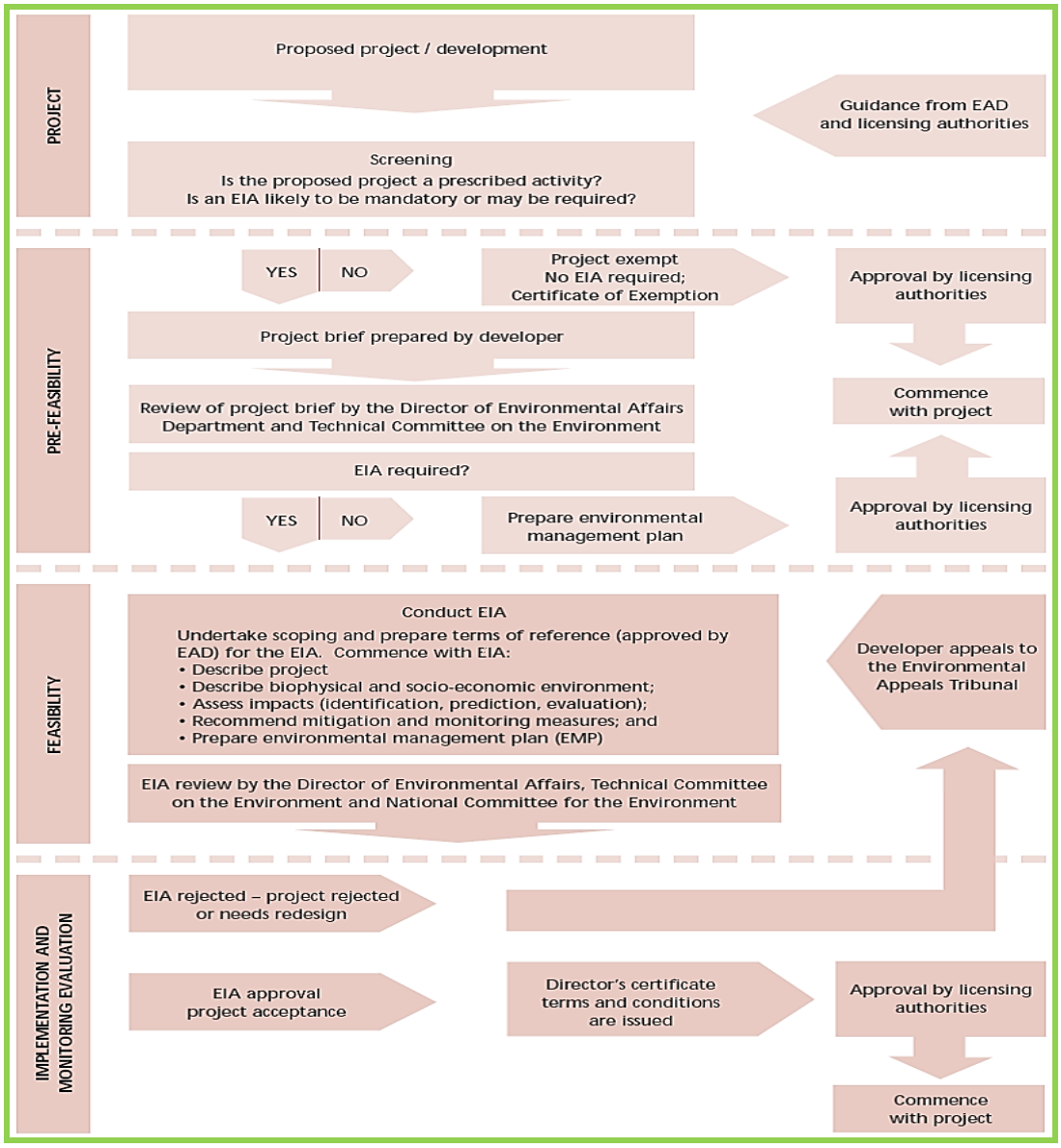
7.2 Steps in the Environmental Assessment Process

The formal environmental assessment process in Malawi involves the following steps:

a. Environmental screening of the project, i.e. determining whether environmental and social impact assessment (ESIA) is required or not;
b. Scoping of the ESIA study and preparation of Terms of Reference for the environmental expert;
c. Conducting the ESIA study and an environmental and social management plan (ESMP);
d. Obtaining ESIA certificate (environmental permission);
e. Implementing the environmental and social management plan (ESMP);
f. Monitoring (compliance monitoring) during construction;
g. Self-auditing (impact and effect monitoring); and
h. Control auditing by the EAD.

A flow diagram of the environmental assessment process appears in the Figure N° 6.

Figure N° 6: The Environmental Assessment Process



Source: Environmental Impact Assessment Guidelines, 1997

7.3 Stakeholders in the Environmental Impact Assessment Process

The stakeholder responsibilities in the process appear in the next Table. This table also indicates the time limit for response by the environmental authorities as per the prescriptions of the environmental assessment and audit guidelines.

Table N° 4: Responsibilities in the environmental assessment process

Activities	Road Authority	Environmental Management Unit	Environment Affair Department	Minister Environment	Time limit for response
Environmental registration (application for EIA certificate)	Submitting project brief		Determines whether an EIA is required or not.		
Environmental screening	Determining level of EIA required				7 days after receipt of project brief
Scoping of EIA study and ToR for consultancy	Holding consultations with interested and affected people, and preparing and submitting scoping report and ToR for environmental expert	Participating in reviewing process	Reviewing scoping report and ToR for environmental expert and approval of ToR for environmental expert		14 days after receipt of ToR
ESIA with ESMP	Conducting EIA, preparing ESMP, submitting EIA Report	Participating in reviewing process	Reviewing EIA and holding public hearings as required	Approval	
EIA certificate			Make recommendation on permitting decision	Granting EIA certificate	
Implementing ESMP	Incorporating mitigation measures into design, construction and opperations.	Supervising road authority	Conducting compliance monitoring inspections		
Environmental monitoring		Monitoring and submitting monitoring reports	Monitoring and preparing monitoring reports		
Environmental self-auditing	Self-auditing and submitting annual audit reports	Supervising road authority	Approval		12 - 20 months after commencement operation

7.4 Environmental Management in the Project Cycle

7.4.1 Planning and Pre-Feasibility Phase

The following environmental actions are required in the planning and pre-feasibility phases of a road project:

- Environmental screening of the project by the RA; and
- Scoping of the ESIA study, including preparation of Terms of Reference for the environmental consultants.

a. Environmental Registration and Project Brief

- The project proponent, usually the road authority, must submit a project brief to EAD; and
- The project brief must be submitted to EAD together with the prescribed registration fee.

Project Brief:

The project brief is not meant to be a huge document describing the project and its environmental and social characteristics and implications in detail. On the other hand it should contain information sufficient for the environmental authority to determine whether an EIA is required or not for the project.

According to the EIA Guidelines 1997, the required information in the project brief is as follows:

i. Nature of the project;
ii. Location of the project, including the physical area that may be affected by the project activities;
iii. Activities that will be undertaken during the project construction, operation and decommissioning phases;
iv. Design of the project (including location of work camps and sources of materials);
v. Materials to be used, products and by-products, waste generation and methods of waste disposal (including stones, gravel and water);
vi. Alternatives to be considered, at a minimum the do-nothing alternative;
vii. The potential environmental impacts of the projects based on available information;
viii. Mitigation measures considered during construction, operation and decommissioning;
ix. An action plan for prevention and management of possible spills and accidents during construction, operation and decommissioning;
x. A plan to ensure the health and safety of workers and neighboring communities; and
xi. A project budget estimate;

The RA must submit ten hard copies and one electronic copy of project brief form to the DEA together with the prescribed fees. One hard copy and one electronic copy must be submitted to the MoTWP and the EMU for information.

b. Environmental Screening

Upon receipt of registration a project brief, EAD will screen the project to determine whether an environmental and social impact assessment (ESIA) is required or not. Within 7 days of receipt of a satisfactory project brief, the EAD will respond to the Roads Authority with its decision, including a justification for its decision.

The result of the environmental screening will be one of the following:

- **EISA is required** because the project is likely to cause significant socio-economic or environmental impacts. In this case the Roads Authority may go on to determine the scope of the EIA study and prepare Terms of Reference for the environmental expert to be approved by EAD.

- **Environmental and Social Management Plan (ESMP) is required** because it cannot be determined whether the project may cause significant socio-economic or environmental impacts until further information is generated; or

- **ESIA is not required** because the project is unlikely to cause significant socio-economic or environmental impacts. In this case the DEA will issue an exempting notification to the developer to proceed with the project

If the EAD deems the provided project brief unsatisfactory, it will request the Roads Authority for additional information, before an environmental screening of the proposed project can take place.

EAD may decide to involve its Technical Committee on Environment (TCE) in the screening process.

c. Scoping of the ESIA Study

Prior to the feasibility study, the ESIA study must be scoped. The Roads Authority conducts the scoping study. The purpose of the scoping study is to determine the approach and methodology of the study, the extent and the focus areas of the study. In addition, Terms of Reference (ToR) for the environmental expert who will undertake the EIA study be prepared. The scoping study and the ToR must be prepared by the Roads Authority and submitted to the EAD for approval.

The accuracy and results of the scoping process depends on the project description, so it is important that the project description be as detailed as possible.

The scoping process includes the following steps:

i. Identifying and describing project alternatives;
ii. Identifying the study parameters, including environmental and socio-economic issues of concern;
iii. Determining the study area (the area of influence);
iv. Conducting preliminary consultation with interested and affected people and developing the consultation methodology for the EIA study;
v. Reviewing and revising the study area and scope of the study based on consultations, as required;
vi. Preparing ToR for the study;
vii. Preparing a time plan for the study;
viii. Identifying the skills and human resources needed to undertake the study;
ix. Drafting the report attached with draft ToR for the study and submitting it for review to EAD; and
x. Possibly revising the draft scoping report based on inputs from the EAD and the TCE and the MOTWP and resubmit for final approval

The ESIA study must always include at least two alternatives, i.e. the main project proposal (often referred to as Alternative 1) and the situation of not implementing the proposed road project (often referred to as the zero-alternative). In addition, other alternatives may be assessed in the ESIA study, as applicable. For road projects this would most often be in terms of alternative alignments, but it could in principle also be in terms of alternative technologies, such as bridge types, surfacing, slope stabilization etc.

d. Conducting preliminary consultation:

The Roads Authority must conduct preliminary consultations of potentially affected people in connection with the scoping process. The preliminary consultations serve three purposes:

- It allows to identify key social and environmental issues based on a consultative process;
- It helps identify the most appropriate methodology for public consultation; and
- It informs local people/groups about the proposed road project.

Therefore, the preliminary consultations should:

- Identify local groups (e.g., local government, NGOs, and CBOs);
- Identify key issues to be included in the study based on preliminary consultations (e.g., geology, natural resources, and cultural practices);
- Outline the consultation process for ESIA study.

This local baseline information should be collected during the scoping phase. The scoping report should clearly identify which environmental and social issues are identified as critical and exactly how the public will be involved during the EIA study.

Consulting affected groups and stakeholders facilitates data collection, problem resolution, and the successful implementation and operation of the road project. Involving local people is likely to result in a more sustainable project, as local people may develop a sense of project ownership and may commit to maintaining the road.

e. Preparing a Time Plan and a Budget for the Study:

A realistic time plan and budget for execution of the ESIA study should be included in the scoping report.

The study should focus its time and resources on the areas where potential impacts are likely to occur and on the issues that are critical to the project. It is important to consider time constraints and the financial budget at the beginning of the project (at planning/pre-feasibility phase) to avoid delays in conducting the ESIA, and to ensure the effectiveness of the procedures.

The following issues should be considered when estimating the time and budget for an EIA study:

- Availability of information from existing database to minimize the need for field study;
- Seasonal aspects of the project area;
- The availability of in-house expertise; and
- Possibility of carrying out the EIA study in parallel with technical and economic feasibility studies.

Preparing the Scoping Report for the ESIA Study

The Roads Authority must prepare and submit the scoping report to EAD for approval. The scoping study report must address the following issues:

- How the scoping was undertaken;
- Identification of issues and problems;
- Synthesis of results of the scoping exercise , including details of potential negative and positive impacts of the proposed project;
- Stakeholder groups identified and how they were involved in the scoping exercise;
- Spatial, temporal and institutional boundaries of the project
- Project alternatives to be considered. At a minimum the do-nothing alternative must be included, i.e. the situation of not implementing the proposed project; and

– Terms of Reference for the environmental expert(s), including approach and methodology of the EIA study, scope and focus areas.

Submission of Draft Scoping Report and Draft ToR for Approval

The Roads Authority must submit one hard copy and one electronic copy of the draft scoping report and the draft Terms of Reference for the environmental expert to DEA, National Council for the Environment (NCE) for approval.

One hard copy and on electronic copy should also be submitted to the MoTWP and Environment Management Unit of the Roads Authority for information and possible comments.

d. Terms of Reference for the Environmental Expert

As part of the scoping exercise, Terms of Reference (ToR) for the environmental expert should be prepared and attached to the scoping report. Depending on the size of the project and the nature of the foreseen environmental impacts the ESIA is usually carried out by a team of experts, including 2 or more of the following fields of expertise:

– Biologist/geographer/environmental scientist
– Sociologist/socio-economist
– Geologist/hydro-geologist/hydrologist
– Marine ecologist/coastal zone specialist (for coastal or marine projects)
– Traffic planner
– Noise and vibrations specialist
– Air quality and climate specialist
– Urban planner/ land use planner
– Environmental engineer
– Economist/ environmental economist.

e. Preliminary Environmental Impact Assessment

If a project type is listed on list B (the non-mandatory list) ESIA may or may not be required. In order to determine whether and ESIA is required a preliminary environmental impact assessment must be undertaken. If the project is likely to cause significant environmental and/or social impacts, an ESIA will be required. If the preliminary assessment reveals that the project is not likely to cause significant impacts, an EIA will not be required.

7.4.2 Feasibility Study and Preliminar Design Phase

The environmental and social impact assessment (ESIA) study is usually carried out concurrently with the feasibility study of the project with the aim of submitting a draft environmental impact statement (EIS) at the end of the feasibility study period, and getting it reviewed and approved, and obtaining the EIA certificate for the project by the end of the preliminary design phase.

On behalf of the road authority, an independent environmental expert/firm must carry out the EIA study and prepare the EIS. The Roads Authority is responsible for submission of the report to the National Council for the Environment (NCE) through EAD. Based on the outcome of the draft EIA the NCE will decide whether a public hearing is necessary. If required, the NCE will conduct the public hearing.

Based on comments and inputs from the review (and the public hearing), the environmental expert will finalize the ESIA. Upon approval of the ESIA, the Minister responsible for the environment

will make his environmental permit decision, i.e. permit the project, and issue an ESIA certificate to permit the project. An overview of the process is presented in the next Figure.

a. The ESIA Study

The typical activities of an EIA study include:

- Project context and project justification;
- Project description;
- Description of alternatives;
- Baseline study to reveal existing environmental conditions in the study area, including field investigations;
- Identification and analysis of impacts;
- Analysis and comparison of alternatives;
- Proposing mitigation measures and assessing residual impacts;
- Preparing an Environmental and Social Management Plan (ESMP) with mitigation plans for detailed design, construction and operation of the road, emergency plan and monitoring plan;
- Preparing the environmental impact statement (EIS).

As mentioned before, in the Annex 4.1 and 4.2 presents guidelines for the preparation of the ESIA and ESMP studies.

Submission of the ESIA:

The Roads Authority must submit the environmental impact statement (EIS) together with a filled EIS submission form. The submission form appears in the Appendixes. The EIS must be accompanied by the Resettlement/Compensation Action Plan (RAP) and a road safety audit report, if such documents have been produced. The Roads Authority must submit ten hard copies and one electronic copy of the draft EIS and the EIS submission form to the DEA. One hard copy and one electronic copy of the draft EIS and the EIS submission form must be submitted to the MoTPW and the Environment Management Unit for information.

Review of the ESIA:

Upon submission of a draft environmental impact statement (EIS), the NCE in consultation with the Technical Committee on Environment (TCE) will review the adequacy of the EIS and provide its comments and inputs to the RA. NCE's comments to the Roads Authority and its environmental expert are usually provided in a meeting where also the TCE representative is present. Based on the comments and inputs from the NCE and the TCE, the environmental expert will finalize the EIS, and the Roads Authority must submit the EIS to the NCE who will provide recommendations regarding a decision to the Minister Responsible for the Environment.

In the course of the review process, the NCE may decide to conduct public hearings to obtain further views of the public regarding the project in concern. The NCE will be responsible for conducting public hearing(s). The outcomes of the public hearing(s) will feed input into the finalization of the EIS and the environmental permitting process together with the comments and inputs from the review process.

ESIA Certificate:

Based on an adequate EIS, the Minister responsible for the environment (advised by the NCE) will make his decision regarding environmental permitting of the project. In making a decision, the Minister responsible for the environment shall take into account:

- The findings and recommendations of the EIS;
- The comments made by relevant ministries, institutions and other interested parties;
- The concerns raised at public hearings, where applicable;
- Advice of the Director of Environment and;
- Other relevant information, as required.

If the project is in compliance with requirements under the Environmental Management Act, 1996, the Minister responsible for the environment will issue an ESIA certificate with attached environmental conditions for the certification. The EIA certificate will be communicated to the road authority, and a copy of the certificate will be made available for inspection by the general public in the Environmental Affairs Department.

b. The Environmental and Social Management Plan (ESMP)

The Roads Authority should prepare an Environmental and Social Management Plan (ESMP) for any road project, irrespective of whether an ESIA has been carried out or not in order to make sure that the Environmental Guidelines for Malawi Road Sector are followed and, in case an ESIA was carried out, to ensure that mitigation measures proposed in the EIS are implemented satisfactorily and timely. If an ESIA is carried out for a project, the ESMP will form an integral part of the EIS. If not, the RA possibly assisted by an environmental consultant, should prepare the ESMP.

The ESMP captures the critical project-specific issues to be managed and ensures that commitments made during the planning phase are incorporated into the design, construction and operational phases of the project. The ESMP presents the implementation responsibilities during the construction and operation phases. The ESMP is prepared using the following information:

- The findings and recommendations of the ESIA study;
- The Environmental Guidelines for Malawi Road Sector;
- Relevant environmental standards;
- Other relevant pieces of legislation;
- Other government agency input; and
- Outcomes of community consultation.

An ESMP should contain the following elements:

i. An implementation plan for management of environmental and social impacts, including:
   - Mitigation measures to be incorporated into the detailed design,
   - Construction phase activities,
   - Operation phase activities;

ii. An emergency plan for accidents and spills, covering:
   - Construction phase,
   - Operation phase;

iii. An environmental monitoring plan, covering:
   - Construction phase,
   - Operation phase;

iv. Reporting requirements by:
   - Road authority,
   - Contractor;

v. Cost estimates and funding sources to implement the ESMP; and

vi. Construction guidelines that specifically address how the contractor will incorporate environmental considerations into the works.

The implementation plan for management of environmental and social impacts should be structured according to the following phases of the road project:

i. Measures to be incorporated into the detailed design of the road;
ii. Measures to be taken during construction; and
iii. Measures to be taken during operation of the road.

Environmental Emergency Plan:

The environmental emergency plan must identify critical incidents and vulnerable areas and populations during construction and operation of a road. The plan must assign roles and responsibilities for action in case of an emergency.

Typical emergencies in vulnerable areas during construction may include:

- Landslides and soil erosion on slopes;
- Siltation of water bodies due to spill of materials, e.g. in connection with a bridge construction or similar river crossing;
- Pollution of water bodies due to spills of oil or chemicals during construction;
- Accidents from use of explosives in quarries; or
- Direct or indirect exposure of people to toxic compounds from spills and unintended discharges during construction.

The emergency plan for the road operation phase does not include normal traffic operations, but should address spills of fuel and chemicals in sensitive or inhabited areas. The plan must assign roles and responsibilities for action in case of an emergency. Inclusion of emergency telephone numbers to relevant authorities and institutions may be helpful.

Environmental Monitoring Plan:

Environmental follow-up (or compliance monitoring) is carried out during the construction phase (but it may also be extended in some cases to the operational phase). The objectives of the follow-up are to ensure the application of the EIA environmental measures and the regulatory requirements, including the mitigation measures. The follow-up activities may also, if required, re-orient the construction works and eventually improve project implementation.

The objectives of the environmental monitoring activities (i.e., effects monitoring) are to check whether the impact predictions were adequate and to verify the efficiency of mitigation and compensation measures.

c. The Resettlement/Compensation Action Plan (RAP)

The social impacts of road projects should be avoided or reduced by using road bypasses to avoid built-up areas. Many social impacts may be related to land acquisition and the management of the resettlement process. Major potential impacts include:

- Displacement of people from an area;
- Loss of land, property, and businesses;

- Economic losses for affected individuals and families (e.g., loss of crops and economic fruit trees) with a temporary or permanent loss of income for subsistence (e.g., loss of a roadside location for an informal business);
- Equity issues (i.e., people with fewer resources and skills become more vulnerable);
- Social disruption and break-up of families due to displacement and relocation;
- Health problems and various forms of psychological depression;
- Loss of community benefits and social disintegration.

In general, involuntary resettlement should be minimized and where displacement is unavoidable, a Resettlement/Compensation Action Plan (RAP) should be implemented as a development program and in accordance with the World Bank requirements.

The RAP should be prepared as a separate document and should be summarized in the EIS. In addition, relevant mitigation measures should be included in the ESMP. The principal objective of a RAP should be to re-establish (or even improve) the social and economic productivity of the displaced community.

In order to assure the compliance of the national and the Bank's Involuntary Resettlement Policy (OP/BP 4.12), a Resettlement Management Framework has been prepared by the RA with the support of the Bank's safeguards team, for the Programme implementation.

d. The Road Safety Audit (RSA)

If a road safety audit has been performed in accordance with the Guide to Road Safety Audit, 2009, the audit report should be attached with the EIS for information. A summary of its findings and recommendations should be included in the EIS. If a road safety audit has not been performed for the road project in concern, the EIA must address road safety issues and recommend measures to reduce risks of accidents. In any case, it should be stated in the EIS, whether a road safety audit was carried out or not.

7.4.3 Tendering, Contracting and Detailed Design Phase

Tendering, contracting of contractor(s), and detailed design phases are the phases, where the Roads Authority will make sure that the conditions in the EIA certificate are converted into actions which will ensure that the road project implementation will comply with environmental standards and requirements. The overall environmental management actions during these phases include:

- Incorporating mitigation measures into detailed design;
- Itemize relevant environmental and socio-economic measures and include them in the Bill of Quantities for the project;
- Include environmental requirements in the tender documents; and
- Include special conditions on environmental performance and management in the contract.

A focused and concise ESMP will be helpful in this process, because it may be attached in part or in whole to the tender documents or the contract agreement.

a. Inclusion of the Environmental Mitigation Measures into Detailed Design

For the recommendations of the EIS to be effectively incorporated into the design process, there must be a collaboration and coordination between the ESIA study team and technical/ engineering design team to ensure that important mitigation measures are integrated into the detailed design and technical specifications. The ESMP and the environmental strip map contain the specific

requirements for inclusion of environmental considerations into the design. The Environmental Guidelines of the Malawi Road Sector, 2004, serves as a guide on good practices in road design.

It is the responsibility of the Roads Authority to oversee that all relevant environmental considerations are included in the detailed design of the road and to make sure that the road design is in compliance with conditions of the EIA certificate. It is advised that the Roads Authority involve the environmental expert who carried out the EIA study in this process.

b. Bill of Quantities (BoQ)

The Roads Authority must ensure that all relevant environmental and socio-economic measures are itemized and included in the Bill of Quantities for the road project, including:

- Technical measures;
- Logistic measures;
- Measures to ensure environmentally and socially construction works;
- Compensation of project-affected people (PAP) cf. the specifications of the resettlement/compensation action plan (RAP);
- Road safety measures;
- Environmental supervision of construction works; and
- Training on environmental and social aspects related to the road works.

It is advised that the Roads Authority involve the environmental expert who carried out the ESIA study in reviewing the BoQ with respect to environmental management requirements.

c. Contract Tendering and Reviewing Bids

All environmental issues should be covered in the contract conditions and specifications to be able to enforce good environmental practice. Each environmental clause should state: what needs to be done; where it needs to be done; when and how the actions will take place; and who is responsible. Clauses should be explicit, leaving little room for misinterpretation.

The contractor must be obliged to assign a competent and qualified person who will supervise and oversee that the road works take place in accordance with good environmental practices and in compliance with the conditions of the ESMP and the ESIA certificate.

Environmental management requirements should be included as special conditions in the contract agreement with the contractor. It is advised that the Roads Authority involve the environmental expert who carried out the ESIA study in reviewing the tender documents with a view to inclusion of the relevant specifications for environmental management.

The Roads Authority may require the contractor to present an environmental management implementation plan. This plan should show in detail how the contractor intends to comply with the ESMP and the environmental conditions of his/her contract. Specifically, the contractor describes the means and mechanisms to ensure respect of the legal and environmental requirements and the good operation of the construction works, equipment, and installations. Construction sites are constantly changing and systems must be in place to review and modify control measures to ensure that they remain effective.

d. Environmental Training of Contractors and Workers

Once the contract is awarded and when required by the ESMP, an environmental-management training program should be initiated. Training should be provided to all principal stakeholders

involved in environmental management, including the Roads Authority and the contractor's staff (e.g. occupational health and safety training), as well as members of the local community. For training to be cost effective, it should involve on-the job training. For example, practical training may involve doing some re-vegetation of steep slopes to prevent soil erosion by using special grass (e.g. vetiver grass, *Vetiveria zizanioides*). Other training may focus on building the capacity of the Roads Authority staff or creating general environmental awareness (e.g., public awareness program on the link between road operation, maintenance, and the environment).

7.4.4 Construction Phase

a. Environmental Follow-Up Activities

During the construction phase, the Roads Authority must monitor the contractor performs his/her work in compliance with the ESMP and the conditions of the ESIA certificate. The Roads Authority must also ensure that remedial actions be taken in case of non-compliance.

In practical terms, the Roads Authority will ensure suitable requirements for environmental supervision is part of the contractors‟ contractual obligations through a requirement for an environmental supervisor. The Roads Authority will further ensure that the supervising road engineer has the responsibility to follow up on environmental management and performance issues.

Environmental management and performance should be a standard point of discussion at each construction site meeting, and the contractor's environmental supervisor should be present at these meetings. Members of the relevant Environmental Management Committee (EMC) and or the Environmental and Social Planner form the Roads Authority may be invited as appropriate.

The main monitoring and follow-up issues and activities during the construction phase of a road project include:

Pre-construction activities

- The contractors assignment of an environmental supervisor;
- Going through the ESMP at the initial construction site in order to make sure that contents, roles and responsibilities of the ESMP are understood and will be adhered to and make agreements on activities and time schedule;
- Environmental supervision of site preparations; and
- Environmental training of staff and others, as required.

Construction activities

- Regular updates on progress of ESMP implementation on the monthly meetings between the contractor (and his/her environmental supervisor) and the supervising road engineer;
- Supervision by the contractor's environmental supervisor;
- Supervision by the supervising road engineer;
- Environmental compliance monitoring;
- Follow- up activities in case of emerging unforeseen environmental issues;
- Follow-up activities in case of non-compliance; and
    - Self-audits by the Roads Authority as deemed necessary.

Activities during demolition of work site

- Final environmental report from the contractor;
- Self-audit by the road authority; and

- Control auditing by the National Environment Management Council, as required.

b. Environmental Supervision

Regular and continual environmental supervision is important to ensure that the contractor complies with the requirements of the Environmental and Social Management Plan (ESMP) and the conditions of the EIA certificate.

The contractor's environmental supervisor in collaboration with the supervising road engineer is responsible for overseeing that the environmental management requirements are met. The environmental supervisor is further responsible for proposing remedial actions in case of non-compliance or occurrence of non-acceptable environmental or socio-economic effects, and for identifying needs for follow-up environmental training of the contractor's staff and management and carry out this training.

The environmental supervision should cover all aspects of the contractor's work. Environmental supervision must include regular site visits and should not be based on second-hand information. However, the contractor should upon advice by the environmental supervisor notify the Roads Authority on any irregularity or event outside the control of the contractor, if the irregularity might result in undesired environmental or socio-economic effects.

The RA and the supervising road engineer should assist the contractor in ensuring corrective measures to counteract undesired environmental or socio-economic effects of such events.

c. Environmental Compliance Monitoring

The environmental monitoring should focus on:

- The extent to which the contractor is complying with the environmental specifications and contract conditions (compliance monitoring); and
- Any unforeseen environmental impacts (i.e., the failure or inadequacy of the mitigation measures) and recommendations on how to manage unforeseen impacts.

The objectives of environmental compliance monitoring are as follows:

- Applying the identified mitigation measures;
- Ensuring that mitigation measures, contract conditions, and specifications are fully implemented during construction;
- Identifying additional mitigation measures, as needed;
- Assessing the efficiency of the mitigation measures and make recommendations for not only the current project, but also for future projects; and
- Resolving problems encountered during the construction phase.

The environmental monitoring team usually includes:

- The Contractor's environmental supervisor;
- The supervising road engineer;
- Any other road engineers or technicians required by the road authority; and/or
- Any other environmental specialists required by the road authority.

d. Meeting and Communications

Progress on the implementation of the Environmental and Social Management Plan (ESMP) should be a standard agenda item on the construction site meetings, and the contractor's environmental supervisor should be present at the discussion of this item. In addition, other environmental specialists from the EMU may be invited, as required.

These following sub-items pertaining to environmental management should be put on the agenda of the construction work meetings:

- Review the status of any problem addressed in the previous meeting; propose additional mitigation measures, if a problem has not been solved;
- Review the main construction activities and any environmental problem that occurred since the last meeting;
- Review the construction activities and general environmental performance, as listed in the ESMP.

Decisions made should be minuted and records of the minutes should be kept with the RA. The records should be made available to the relevant environmental management committees (EMCs) and the RA's EMU upon request.

e. Final Inspection and Handing Over of Site

This stage mainly involves demobilizing (decommissioning) temporary infrastructure, installations, and equipment, and restoring the sites.

The environmental specialists of the Roads Authority should be present at the final inspection and handing over of the site. The environmental specialists of RA are its officers of the Environment Management Unit (EMU).

In the hand-over process, the contractor's compliance to environmental contract conditions and specifications is confirmed. Specific attention should be paid to the clearance of waste and returning disturbed land to a natural and useable condition. An inspection of all off-site activities, such as quarry sites, should be conducted.

f. Self-Auditing

A self-audit of a road project may be instituted by the Roads Authority in concern and by the MoTWP. Either of these institutions has the authority to cause a self-audit to held for a road project at any time during the construction phase.

The purpose of a self-audit is to control whether all relevant environmental conditions in the ESMP and the EIA certificate are complied with, to investigate the effects of the environmental management measures, and to propose remedial actions in case of unsatisfactory performance or unsatisfactory effect of the environmental management measures during the construction.

A self-audit should be carried out by a team of experts, who are not directly involved in the implementation of the project in concern. It could be a hired consultant, a team comprising representatives of the MoTWP the road authority's environmental management unit, or a combination hereof. The Roads Authority and the contractor are obliged to provide the audit team with all required data and information for the audit.

g. Control Auditing during Construction

The EAD may at any time during the construction phase cause a control audit to be held. The objectives and activities of a control audit will be determined by EAD, and the RA will bear the

costs of this type of audit. The Roads Authority and the contractor are obliged to provide all relevant data and information to the EAD's audit team. The EAD may decide that the environmental conditions of the EIA certificate may be reviewed and revised based on the outcome of a control audit.

7.4.5 Operation and Maintenance Phase

a. Environmental Monitoring and Follow-up

The following measures should be considered during the maintenance phase:

- Ensure timely maintenance to prevent/ minimize road degradation, flooding, road accidents, traffic noise, and landscape degradation;
- Maintain grass and other roadside vegetation to slow water flow and trap suspended matter, and hence to prevent/reduce soil erosion; and
- Prune bushes, trees, and cut grass frequently to prevent safety and fire hazards related to excessive amounts of vegetation along the road.

b. The Road Authority's Environmental Auditing

Some ESIA certificates require the submission of an audit report, usually about one year after completion of the construction works. The post-project evaluation serves this purpose, as well as providing the necessary feedback to the project-planning phase for cost-effective environmental management. The goal of a post-project evaluation is to confirm that the project was implemented in accordance with the terms and conditions of the ESIA certificate and to take remedial measures, as required.

The critical goal of a post-project evaluation should be to apply the lessons learned from completed projects to future road works. Important tasks include:

- Evaluating and implementing remedial actions during road operation;
- Conducting consultation with key stakeholders;
- Incorporating lessons learned into future road project planning; and
- Monitoring and evaluating effects.

Public participation in the audit process should be encouraged in order to obtain the views and concerns of the concerned parties with respect to impacts of the road and the road operation.

c. Control Auditing during Operation

The EAD at any time during the road operation phase cause a control audit to be held. The objectives and activities of a control audit will be determined by the NCE, and the NCE will bear the costs of this type of audit. The EAD may decide that the environmental conditions of the EIA certificate may be reviewed and revised based on the outcome of a control audit.

d. Environmental Management in Road Maintenance

The Roads Authority is responsible for proper environmental management of road operations and road maintenance during the operation phase of the road. The relevant environmental bodies may request for advice on emerging situations, as required. The Environmental and Social Management Plan (ESMP) may include environmental management requirements for the operation phase of the road.

Even if the ESMP is not covering the operation phase, relevant environmental and socio-economic issues should be addressed properly in road maintenance plans and road maintenance projects. The management requirements may focus on:

- The need for monitoring and follow-up on road traffic operations, especially safeguarding against noise and dust exposure, air pollution and road accidents; and
- The need for routine and periodic maintenance activities that will remedy undesired environmental impacts during operation, such as measures to:

  - Ensure proper road drainage;
  - Safeguard against erosion of the road;
  - Safeguard against erosion of the surroundings caused by the road;
  - Ensure proper surfacing to reduce noise and dust generation;
  - Proper maintenance of shoulders and walking/biking paths;
  - Preventing people from exposure to noise, dust and air pollution resulting from road operations and vehicle emissions; and
  - Undesired use of the road reserve.

e. Environmental Management of Vehicles and Traffic Operation

Traffic operation is a major source of ambient noise, dust and air pollution. The problem is particularly pertinent in densely populated and heavily trafficked areas, where both noise and exposure to dust and air pollutant may rise to hazardous levels.

General plans, programs, or a measure to manage emissions from vehicles to ensure compliance with vehicle emission standards is the responsibility of the MoTWP.

f. Decommissioning

In certain upgrading projects, however, realignments will lead to abandonment of shorter or longer road sections. In such cases a restoration plan for the abandoned sections should be part of the ESIA study for the upgrading project.

Annexes

Annex N° 1: Results of the Socialization and list of participants

ROADS AUTHORITY MALAWI

ATTENDANCE LIST

Workshop for Environmental and Social Management Framework (ESMF) and a Resettlement Policy Framework (RPF) for the Southern African Trade and Transport Facilitation (Malawi) Project, 24[TH] September, 2014, Capital Hotel, Lilongwe

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Annex N° 2: World Bank Safeguards Polices

1. Environmental Assessment (OP/BP 4.01)

This policy requires environmental assessment (EA) of projects/programs proposed for Bank financing to ensure that they are environmentally sustainable, and also to inform decision making. EA is a process where the breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the projects. The EA process takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and cultural property); and trans-boundary and global environmental aspects.

The environmental and social impacts of the SATTFP will come from the road and others infrastructure projects that will receive financing under the SATTFP. However, since the location of these projects will not be identified before appraisal of the Programme, the EA process calls for the GoM to prepare this ESMF to establish a mechanism to determine and assess future potential environmental and social impacts during implementation of the projects under the proposed SATTFP, and then set out mitigation, monitoring, and institutional measures to be implemented during project operations to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels.

Therefore, this ESMF establishes the EA process for implementation of project activities in the proposed SATTFP project.

2. Natural Habitats (OP/BP 4.04)

The World Bank does not support projects that, in the Bank's opinion, involve significant conversion or degradation of critical natural habitats. Wherever feasible, Bank-financed projects are sited on lands already converted (excluding any lands that in the Bank's opinion were converted in anticipation of the project). The Bank does not support projects involving the significant conversion of natural habitats unless there are no feasible alternatives for the project and its location, and comprehensive analysis demonstrates that overall benefits from the project substantially outweigh the environmental costs. If the EA indicates that a project would significantly convert or degrade natural habitats, the project includes mitigation measures acceptable to the Bank. Such mitigation measures include, as appropriate, minimizing habitat loss (for example, strategic habitat retention and post-development restoration) and establishing and maintaining an ecologically similar protected area. The Bank accepts other forms of mitigation measures only when they are technically justified.

In deciding whether to support a project with potential adverse impacts on a natural habitat, the Bank takes into account the borrowers/developers ability to implement the appropriate conservation and mitigation measures. If there are potential institutional capacity problems, the project should include components to develop the capacity of national and local institutions for effective environmental planning and management. The mitigation measures specified for the project may be used to enhance the practical field capacity of national and local institutions.

3. Indigenous Peoples (OP/BP 4.10)

The World Bank policy on indigenous or vulnerable peoples underscores the need for Borrowers and Bank staff to identify indigenous peoples, consult with them, ensure that they participate in, and benefit from Bank-funded operations in a culturally appropriate way, and that adverse impacts on them are avoided, or where not feasible, minimized or mitigated.

This policy contributes to the Bank's mission of poverty reduction and sustainable development by ensuring that the development process fully respects the dignity, human rights, economies, and cultures of Indigenous Peoples or Vulnerable Groups. For all projects that are proposed for Bank financing that affect Vulnerable Groups, the Bank requires the borrower to engage in a process of free, prior, and informed consultation. The Bank provides project financing only where free, prior, and informed consultation results in broad community support to the project by the affected indigenous or vulnerable peoples. Such Bank-financed projects include measures to (a) avoid potentially adverse effects on the Indigenous Peoples' communities; or (b) when avoidance is not feasible, minimize, mitigate, or compensate for such effects. Bank-financed projects are also designed to ensure that the Indigenous or Vulnerable Groups receive social and economic benefits that are culturally appropriate and gender and intergenerational inclusive.

The Bank recognizes that the identities and cultures of indigenous or vulnerable peoples or groups are inextricably linked to the lands on which they live and the natural resources on which they depend. These distinct circumstances expose indigenous peoples to different types of risks and levels of impacts from development projects, including loss of identity, culture, and customary livelihoods, as well as exposure to disease. Gender and intergenerational issues among indigenous peoples also are complex. As social groups with identities that are often distinct from dominant groups in their national societies, indigenous peoples are frequently among the most marginalized and vulnerable segments of the population. As a result, their economic, social, and legal status often limits their capacity to defend their interests in and rights to lands, territories, and other productive resources, and/or restricts their ability to participate in and benefit from development. At the same time, the Bank recognizes that indigenous or vulnerable groups play a vital role in sustainable development and that their rights are increasingly being addressed under both domestic and international law.

Identification. Because of the varied and changing contexts in which indigenous peoples live, and because there is no universally accepted definition of "Indigenous Peoples," this policy does not define the term. Indigenous peoples may be referred to in different countries by such terms as "indigenous ethnic minorities," "aboriginals," "hill tribes," "minority nationalities," "scheduled tribes," or "tribal groups". For the case of Malawi, in terms of this policy, such groups will be referred to as vulnerable groups, and their characteristics in varying degrees are:

(a) Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
(b) Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
(c) Customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and
(d) An indigenous language, often different from the official language of the country or region.

4. Involuntary Resettlement (OP/BP 4.12)

The developer will make dedicated efforts to avoid impacts on people, land and property, including people's access to natural and other economic resources. Nevertheless, land appropriation, compensation, and resettlement of residents seem inevitable for certain types of projects in certain areas. This social issue is of crucial concern to the GoM and the Bank, because its impact on poverty, if left unmitigated, is negative, immediate, and widespread. A Compensation and Resettlement Guidelines (CRG) has been prepared by the government and approved by the Bank in compliance with OP/BP 4.12. The CRG provides guidelines for the Resettlement Action Plan (RAP) that must be prepared when any program investment triggers this policy. In some cases, the World Bank reserves the right to review any RAP as a condition for financing that particular project.

This policy would be triggered when a project causes the GoM to appropriate land or other assets resulting in: (i) relocation or loss of shelter, (ii) loss of assets or access to assets, and (iii) loss of income sources or means of livelihood, whether or not the affected persons must move to another location.

This policy, in most cases, is not triggered because people are being affected by physical displacement. Typically this policy is triggered because program activity requires appropriation of land, whereby a physical piece of land is needed and people may be affected because they are cultivating on that land, they may have buildings on the land, they may be using the land for water and grazing of animals, or they may otherwise access the land economically, spiritually, or any other way that may not be possible during and after the project is implemented. Therefore, people in most cases are compensated for their loss (of land, property, or access) either in kind or in cash, or both.

The resettlement policy applies to all displaced persons, regardless of the total number affected, the severity of the impact, or whether or not they have legal title to the land. Particular attention should be given to the needs of vulnerable groups among those displaced. The policy also requires that RAPs must be implemented before implementation/start of project construction to ensure that displacement or restriction of access does not occur before necessary measures for resettlement and compensation are in place. For projects requiring land appropriation, it is further required that these measures include provision of compensation and of other assistance required for relocation, prior to displacement, and preparation and provision of resettlement sites with adequate facilities, where required. In particular, the appropriation of land and related assets may take place only after compensation has been paid, and where applicable, resettlement sites, new homes, related infrastructure, and moving allowances have been provided to displaced persons. For program activities requiring relocation or loss of shelter, the policy further requires that measures to assist the displaced persons are implemented in accordance with the RAPs.

Where there is a conflict between the laws of Malawi and the Bank's OP/BP 4.12, the latter must take precedence if the Bank is to fund the project.

5. Cultural Property (OP/BP 4.11)

Cultural property includes sites having archaeological (prehistoric), paleontological historical, religious, and unique natural significance. The Bank will normally decline to finance a project that will significantly damage irreplaceable cultural property, and will assist only those projects that are sited or designed so as to prevent such damage.

It is not anticipated that the projects financed by the SATTFP will adversely affect sites having archeological, paleontological, historical, religious, or unique natural significance as defined under OP/BP 4.11. However, a screening mechanism is proposed to ensure that any such sites are identified and avoided, or impacts mitigated, in line with the cultural resources policy. The public, project contractors, and operators will be notified of the potential for chance finds, and chance find procedures will be included in construction contracts.

Annex N° 3: Environmental and social impacts and measures in the Road Sector

1. Identification of the environmental and social impacts

1.1 Effects related to Road Sitting

h. Road Sitting

Sitting of a road is the most critical decision in road construction. It will largely determine the type and magnitude of environmental impacts (physical, social and economic). The following should be avoided: alignments through lands of indigenous peoples, protected areas, critical vegetation communities and wildlife habitat, lands unsuited to the land use changes that are likely to be brought about by both planned and unplanned results of the existence of the road, and locations where potential hazards exist.

1.2 Social Impacts

a. Local Uncertainty

The local population generally hears rumors or stories about road projects well before construction or even land acquisition occur. During this phase the community generally lacks accurate detailed knowledge of the proposed activities and feels serious concern about the effects that the project will have on them. Since land acquisition affects people's livelihood, this is a common matter for concern. People will frequently postpone making important changes to their property, income production or lifestyles while there is any uncertainty about the effects that they will suffer from the road project.

b. Severance and social disruption

Roadways, particularly where they are major highways or involve steep embankments, can disrupt existing, long-established social relationships through making it physically difficult for people to move between houses or between communities. This affects not only foot traffic but also local transportation such as bicycles, horse-drawn vehicles, agricultural tractors, motorcycles and other forms of transport which do not combine well with high speed traffic. There is also the risk of affecting farmers' access to their farmland, or between one part of their land and another, making it difficult to move livestock and machinery from one part of the farm to another.

c. Disturbance to existing properties frontage, or public utilities

Where new roads are created or existing roads are widened there are likely to be impacts on existing property frontages or on public utilities such as water and electricity supplies. Both types of impacts involve costs, whether to individuals or to the community.

d. Resettlement

This refers to resettlement where inhabitants are moved away from their original locality because their dwelling places or income earning land will become part of the right of way for a road. It is important to note that settlers who are occupying a proposed right of way illegally and who are moved to another location (or are forced to move themselves) should be included in resettlement programs. However some consideration needs to be given to the length of settlement in the right of

way – it is not unknown for people to move into a right of way after a project is announced so as to receive benefits such as compensation and resettlement.

The major potential impacts of resettlement include:

- Adverse socio-economic impacts on both those resettled and on the host population. These impacts will occur for all groups but are likely to be greatest for ethnic minorities, the aged (who are less able to adapt to a new environment and changes in lifestyle), and groups who depend on a specific aspect of their present environment for their livelihood.

  Groups, which have strong cultural ties to their present location, will require particular measures and may warrant diversion of the road to avoid having to resettle them. Examples include groups which have strong spiritual ties to a place or to a feature of a place and who believe that their existence as a people is dependent on those ties. Strong cultural ties to burial sites are also not uncommon.

- Conflict between those resettled and the host population. Very significant and long-term impacts can occur where there are major cultural differences between those resettled and the original population in the resettlement area. Not uncommonly these impacts are expressed as an ongoing lack of cooperation and communication that may escalate into overt violence.

  Even without major cultural differences, there is likely to be resentment among the host population of those resettled into their area. This stems from a range of perceptions, including: the impression that those resettled are receiving preferential treatment from the government; feelings that the local resources are inadequate to support an increased population; and a general fear and distrust of outsiders.

- Adverse impacts on the environment in and around the resettlement area. New settlements make new demands on their environment. In addition, the preparation of the resettlement area, including the construction of infrastructure such as roads, houses, and water supplies, and the clearing of land for agriculture, are likely to have environmental impacts. These must be regarded as impacts of the original road project that caused the resettlement and must be assessed as part of that project.

  New settlers in an area will lack the local ecological and resource management knowledge accumulated by local people over many generations. For this reason they are likely to engage in unsustainable resource exploitation. Even where they are aware of the environmental limitations of their new area, the depressed economic circumstances resulting from resettlement may force them to engage in unsustainable resource use merely in order to survive.

e. Unrest and dissatisfaction over distribution of labor opportunities and other benefits

Road projects generally involve significant employment of unskilled and semi-skilled labor and also provide opportunities for gaining training or experience which provides access to future employment. If local communities see these advantages going to outsiders there are likely to be reactions against the road project.

Similarly, the establishment of a large labor force in a concentrated locality generates opportunities for commercial transactions such as the provision of food and drink. There is a risk that local small business people will lose out on these benefits to outsiders who have experience in such interactions with projects. This can also cause or exacerbate dissatisfaction among local communities.

f. Disease risk associated with workers in labor camps

Workers in labor camps may be at risk of a number of diseases. These diseases may have an adverse impact on the road construction schedule, on the cost of the project, on the long-term health and income of the workers, and on the local population.

Typically diseases and illnesses may be water borne, either through a vector associated with water, as in the case of malaria, dengue fever, and schistosomiasis, or directly through disease organisms in the water supply to the camp as in the case of amoebic dysentery. Some of the road workers may also be carriers of mosquito-borne diseases.

Attention should also be paid to sexually transmitted diseases, particularly HIV/AIDS. This may be brought into the area by infected road workers who then pass on the disease to the local population, possibly through the services of prostitutes. In other situations, particularly where a large labor force is involved, the labor camp may attract prostitutes from outside the local area, and this may introduce HIV/AIDS to the workforce and to the local community.

g. Impacts on health and social well-being of local communities

The considerations involved here are much the same as for the previous heading (*Disease Risks to Workers in Labor Camps*). However, in addition, where construction crews are from different ethnic backgrounds to the local community there is the potential for misunderstandings and clashes. These difficulties can exacerbate other minor irritations caused by the presence of the construction workers and might lead to a lack of cooperation or even outright hostility. Where road workers remain in the area and become permanent settlers any small social frictions may develop into more open hostilities.

There is also the consideration that the changes brought about by improved access to the community may result in social and economic problems. Road projects improve access to communities and generally result in increased interaction between communities and outsiders who use the route. In some cases, such as where a locality develops into a refueling and refreshment stop for road users, this contact may be extensive. This can result in health impacts on local communities and in particular an increase in HIV/AIDS infections.

h. Labor camp may become a permanent settlement

Labor camps that are located in the one place for long periods of time, particularly where workers have their families with them tend to become permanent settlements. This applies more to the temporary unskilled and semi-skilled construction workers than to skilled employees. Since such camps are typically constructed as temporary facilities their amenities, e.g. for waste and sewage disposal, are also of a temporary nature and not generally suited to long-term settlement. There is a general tendency for such settlements to take on slum-like characteristics.

Where labor camps become long-term settlements they run the risk of adding significant demands to what may be already over-extended local infrastructure such as schools and health care programs.

i. Population increase as a result of Immigration

The improved or new access provided by road construction may lead to a local population increase as a result of in-migration. Where this occurs gradually over a long period environmental impacts are less likely to be severe than where the increase occurs over a short time. Rapid population increases can result from road projects where: there is a major project being undertaken at some point along the road (e.g. a hydropower project); there are significant opportunities to exploit

valuable resources somewhere along or adjacent to the road; or where there is a serious shortage of land for settlement or agriculture in other parts of the country.

Rapid increases in population can have significant impacts on the natural and socio-economic environment of the area, due to demands on local resources, the need for infrastructure, lack of waste disposal facilities, and conflicts with original communities.

These impacts of road construction can be difficult for existing government services to control because of the unexpected significant extra workload and possibly the imposition of new responsibilities for which staff are not trained or budgets are not available.

j. Hazard when quarry or pits is abandoned

When quarries or borrow pits are abandoned after construction is completed they can become a hazard to local communities, either through the danger that they pose to people and livestock who might fall into them (whether full of water or not), or through disease risk resulting from the breeding of disease vectors (e.g. mosquitoes or snails) in water collected in them.

Abandoned quarries can also represent a significant visual impact on the landscape.

k. Aesthetic visual impacts of quarries and borrow pits

Abandoned quarries and borrow pits can represent significant visual impacts on the landscape. Apart from the magnitude of the impact that these features cause directly, their presence can lead to an ongoing lack of consideration for visual landscape values in the area that encourages other impacts.

l. Aesthetics visual impacts of right of way on landscape

Where roads pass through areas of high scenic value the intrusion of the road and associated earthworks and structures into the landscape may detract from those values.

m. Destruction or lacking-in of archeological, historic and cultural values

Items of archaeological, historical and cultural value are important not only to local people but also as a source of tourism revenue, either now or in the future. It is therefore important that these values receive appropriate protection. Road works can destroy archaeological, historical and cultural values through direct physical damage. However another impact comes about when the sites are not destroyed but are sealed under road surfacing. This has the effect of preventing scientific access to the material – possibly for very long periods of time. In such cases some decision needs to be made as to whether it is best to take the opportunity to carry out some recording of the site – possibly on a sampling basis, so as to have a better appreciation of the nature and value of the site and also to make at least some data available for present day use by experts.

The existence of archaeological sites is often unsuspected until artifacts are uncovered during construction work. Where there is some likelihood that archaeological sites exist along a route, an appropriately qualified person can be tasked with accompanying the equipment making the first earthworks, in order to identify sites of importance, as they are uncovered. There should be provision for work to be halted in a location for a defined period while the significance of uncovered sites is assessed. Similarly there should be provision for further delays if it is determined that sites are of high significance.

Where roads provide new access by passing close to archaeological or historical sites there is the potential for loss or reduction of these values through the resulting improved access for illegal removal and vandalism.

Quarries pose a particular risk to pre-historic archaeological values through the destruction of caves and rock shelters. These sites frequently contain layers of debris in the floors which constitute a record of the lifestyles of the pre-historic population at the site, as well as a record of the ecology of the area at the time.

Quarrying in areas with caves or rock shelters not only risks totally destroying these sites but also carries a risk that they will be damaged by quarry staff.

1.3 Loss of ecological and productive values

a. Loss of important species, communities, habitats and landscapes

Road projects can have significant impacts on important animal and plant species and communities as well as on landscapes.

These impacts are more common in the case of construction involving new right of way where there is destruction of habitats such as forest or wetland. However where an area has been settled for some time human changes to the original ecosystem may mean that the only areas in which some species survive is in the remnants of the original ecosystem which persist along the sides or roads.

In general, the total area destroyed directly by the construction of a new road is not great – usually some tens of hectares – depending, of course, on the length of the road. However other factors can significantly increase the importance of this loss, including:

- Additional areas destroyed for labor camps, workshops, borrow pits, quarries, etc.;
- Areas impacted by harvesting of fuel-wood, cutting construction timber for camps, formwork, etc.
- Impacts of induced development (in-migration, opening of agricultural land, logging, industrial areas) resulting from road construction; and
- Dividing of home ranges of some species by the road, thus reducing the effective habitat area.

b. Loss of roadside vegetation

Roadside vegetation can have a range of important functions, including:

- Providing shade to travelers;
- Providing visual amenity;
- A source of vegetable and animal food for local people;
- A source of building material for local people;
- A habitat for plant and animal species;
- A migratory pathway for bird, mammal, reptile and insect species; and
- A corridor for wildlife between otherwise separated vegetation patches.

Road widening projects typically remove roadside vegetation – often unnecessarily. Similarly, road construction projects tend to clear the whole width of the right of way, even though this is seldom necessary. Median strips between divided traffic lanes are also frequently cleared of vegetation for no good reason.

In some cases cleared verges and median strips are replanted with exotic species – these generally do not provide an equivalent ecological function to native species and may be (or become) pest species.

c. Loss of riverside vegetation

Riverside vegetation performs a number of highly significant ecological functions. These are frequently essential to the maintenance of aquatic systems and should be strenuously protected. The functions of riverside vegetation (and also usually of vegetation beside lakes and ponds) include:

- Shading of water to maintain temperatures within ranges in which aquatic life can live;
- Supporting aquatic food chains through inputs of vegetative material, either directly through leaves and branches falling into the water, or indirectly as run-off of decomposed matter from the leaf layer under the vegetation (non-native vegetation species generally do not provide good food sources since native decomposing organisms are not adapted to break down the exotic plant material);
- Providing habitat for species such as insects which become part of the aquatic food chain;
- Creating breeding, shelter and feeding habitat for aquatic species when trees and larger branches fall into the water (non-native species do not provide such good habitat as they do not decompose as readily to provide hollows);
- Preventing bank erosion during peak flow periods; and
- Trapping sediment flowing from land-based sources that would otherwise raise turbidity in the water.

d. Spoil disposal leading to loss of habitat

Spoil disposal can lead to loss of habitat through direct covering of habitat (usually only significant in the case of highly endangered or highly restricted habitats) or through erosion of disposal areas leading to sedimentation of (usually aquatic) habitats.

e. Loss of roadside water supplies

It is not unusual for roadside pools (including abandoned borrow pits) to become an important source of water during the dry season. In some cases these pools are also part of the local protein supply through the fish and other aquatic life caught there. They may also be used for washing livestock such as buffalo and as places for harvesting reeds and other water plants for roofing or construction.

Road widening projects have the potential to destroy these water supplies, at least temporarily and possibly permanently.

f. Disruption to groundwater supplies

Quarrying, particularly in limestone areas, can disrupt groundwater supplies by rupturing impervious layers and allowing the water stored in the aquifer to escape into deeper formations. This can have impacts over very extensive areas and can completely destroy community and agricultural dry season water supplies.

g. Disruption to animal migrations

Roadways can block or disrupt animal migrations. This usually occurs as a result of the break in the habitat that roads create. A very wide range of animal groups can be affected, ranging from

elephants to very small animals such as mice and squirrels. Where roads cross waterways they can impact the migrations of aquatic species such as fish and frogs. For some species this involves moving with advancing floodwaters across areas which are dry for much of the year and are therefore not obviously fish migration routes. It is important to obtain local knowledge of fish migrations and the water conditions which such migrations require.

Since animals undertake migrations in order to meet some biological need (e.g. moving to seasonally available food sources or breeding areas) disruption of migration routes can result in the loss of the affected animal population.

Local communities should always be surveyed to gather information about animal migrations in their area before the construction of a new right of way.

h. Impact on local resources through demand for fuel, food, food and building materials

The establishment of labor camps and workshops can impact on the local resource base in a number of ways, including:

- Cutting of trees for fuel for cooking and heating;
- Harvesting plant and animal products for food;
- Buying up of locally produced food supplies so that there is insufficient for local people (who may be unable to pay the high cash prices paid by construction crews); and
- Cutting of trees, reeds, etc., for construction of camp buildings and workshops.

In addition, trees may be cut for fuel to heat bitumen.

All of these factors can adversely impact both the local ecology and the local communities.

i. Impact on local wildlife through recreational activities by workforce

It is not uncommon for construction crews to engage in hunting or trapping of local wildlife during their free time. This may be done for relaxation or in order to vary their protein supply. Impacts can be quite severe where there is a large workforce or where the local wildlife is rare, endangered, or merely susceptible to disturbance. Such impacts can also affect local human populations where they make it more difficult for them to secure necessary protein supplies.

j. Post construction increase in harvest of environmentally sensitive products

One of the most significant secondary impacts of road projects can be the increase in harvesting of environmentally sensitive products. This most commonly occurs as a result of improved access to markets, either because transport times are reduced (as in the case of fresh fish and meat from wildlife) or because bulky items can be more easily transported (as in the case of timber). Additional pressure leading to increased harvests comes from the increase in population resulting from in-migration following road construction.

A particularly damaging situation occurs when roads promote trade in wildlife. This happens most often when a road is constructed in or near an area with high wildlife values and also runs to or across an international border.

Prior to road construction harvesting of food and construction products will generally be for subsistence purposes or perhaps for manufacture of easily transported products – in any case, volumes sold out of the area will have been limited by the difficulties of transport. In such situations the level of harvest is commonly sustainable.

When roads provide greatly improved access to markets local people are likely to take advantage of this opportunity to increase their income by increasing the amount of resources that they harvest. In many cases they are actively encouraged in this by buyers from outside the area who now have access. The ability to sell greater volumes of the resource can lead to the introduction of more "efficient" harvesting technology that might previously have been unnecessary. Such new technologies might not only harvest more of the resource, they may also cause damage to the ecosystem in the harvesting process, thereby exacerbating the un-sustainability of the process.

The end result of the improved access to markets for local products may be that these are quickly exhausted, leaving the people in a worse situation than they were before road construction.

k. Introduction of plant and animal pest

Bringing heavy equipment and construction supplies into an area has the potential to inadvertently introduce plant and animal pests to the area. Introductions of pest species in this way can easily cross international borders. Such pests can have a very significant long-term impact on the environment and the economy.

Ways in which pests are typically introduced through road construction projects are by seeds carried in mud and dust on construction equipment and by animals which are carried in the spaces in materials such as pipes.

Animal pests, particularly reptiles and amphibians, can similarly be transported long distances.

l. Loss of agricultural land

Agricultural land, already leveled and cleared, provides what seems an ideal alignment for roads. The loss of land to the right of way itself may be relatively insignificant, though it still may be significant in local terms. However the development attracted to the area by the improved access created by the road (induced development), coupled with increasing land values along roads, can lead to conversion of large tracts of agricultural land to other uses. This potential conversion needs to be considered in planning and in impact assessment.

In general roads, particularly national roads, should not be routed through agricultural land.

m. Impediment to mineral resources exploitation

It is unlikely that a road would totally prevent access to an important mineral deposit. However it may happen that a road or highway is placed in such a location that it makes exploitation of a mineral deposit difficult or more expensive. Regard also needs to be had to the settlement and industry likely to locate itself along the road. These will cover much larger areas than the road itself, and can block access to underlying mineral deposits.

1.4 Hydrological and water resources

a. Affect of sediment on water bodies

Sediment has a variety of harmful impacts on water bodies. The overall effects of these are to reduce the productivity of aquatic systems, reduce important functions such as flood control and water supply, and affect human health.

This impacts the environment in a number of ways, such as preventing light penetration which inhibits the growth of aquatic vegetation and reduces the chances of fish seeing their prey to

capture it. Waters with high turbidity tend to have higher temperatures and lower dissolved oxygen concentration - this can lead to the death or reduced breeding success of aquatic organisms.

Suspended sediment, particularly clay particles, can provide a site for harmful bacteria which makes them more difficult to eliminate through normal water treatment processes. This can have human health impacts as well as increasing the cost of treating water supplies to an acceptable quality.

Increased turbidity can also reduce or remove the aesthetic/visual values of a water body.

– Settling of sediment on the bottom of the waterway;

- Settling of sediment can have a wide range of impacts:
  - Smothering aquatic plants and bottom living organisms;
  - Covering fish spawning areas and food supplies;
  - Reducing the capacity of channels to carry water, thus affecting functions such as flood regulation, water supply, and navigation.

– Interference with aquatic organisms; and

- Sediment particles in the water can harm the gills of fish and block the filtering mechanisms of filter-feeders such as mollusks.

b. Erosion and Sedimentation

One of the major direct environmental effects of road construction (particularly of rural roads) is erosion and subsequent sedimentation. Construction in the rainy season, or improper construction methods which leave soils exposed unnecessarily after dry season construction, can lead to significant erosion. Improper drainage from roads in areas of high rainfall can ruin roads and have adverse impacts on adjacent land, particularly in steep areas. Even during the dry season, or in areas of generally low rainfall, if the drainage and erosion prevention is badly designed, a short but intense rainfall can cause significant erosion downstream of road drainage. Erosion is not only damaging to land and vegetation but also causes serious sedimentation problems in nearby surface waters.

c. Impacts on drainage

The design of roads can have detrimental impacts on the drainage of surrounding areas. For example, roads built on embankments which interfere with cross drainage, and roads on causeways which do not allow adequately for maintaining natural water flows can permanently impair the biological cycles and productivity of wetland ecosystems. Similarly roads can cause flooding of adjacent areas by blocking the flow of water. Road works which cause damming of run-of water can also raise the groundwater table, with detrimental impacts on crops, vegetation and water supplies.

Road works can also lead to diversion of water away from wetlands and water supplies. This can have significant impacts on both wildlife and human populations.

Attention needs to be paid not only to natural drainage but also to existing constructed drainage systems. Local irrigation channels (sometimes indistinguishable from roadside drains) can be crucial to the production of dry season crops.

Where road works divert water from its previous course this can lead to flooding impacts in the area receiving the diverted water.

d. Removal of material from river and stream beds

Removal of sand, gravel and rocks from streams can have a number of significant impacts, including:

- Destruction of breeding, feeding and shelter habitats of fish and other aquatic life;
- Increase in sediment load of downstream water through disturbance; and
- Changes in bottom profile leading to changes in direction and velocity of water flow – this then leads to changes in direction and flow of water which can cause erosion of stream base or banks. Where banks erode there is likely to be secondary impacts due to the loss of riparian vegetation and deposition of sediment downstream.

e. Erosion due to changes in drainage

Where drainage is diverted by road works the increased flows in the discharge area can cause severe erosion. This might happen at the point where water is released from a drainage structure, or further downstream where a number of drainage discharges come together to produce high flow volumes.

f. Spoil disposal leading to sedimentation

Spoil disposal can lead to severe sediment impacts, particularly where spoil is disposed of in steep areas or into or near watercourses, or where spoil is not properly stabilized.

1.5 Traffic impacts

a. Traffic impacts of mobilizing equipment and movement during the construction

The movement of large equipment along public roads introduces risks of traffic accidents, particularly when such equipment is over-width or over-length.

In addition, movement of equipment during construction is often along or across lanes being used by normal traffic. This poses a risk of collision between construction equipment and normal traffic.

b. Traffic flow disruption due to road bed construction

Normal traffic flows can be severely disrupted by roadbed construction. This can have economic as well as human health impacts.

1.6 Traffic accidents on complete road

Any project which generates increased traffic or results in higher travel speed will have a potential risk of increased numbers of traffic accidents.

1.7 Air, water and noise pollution

a. Water pollution from sewage and rubbish disposal

Labor camps can generate large quantities of wastes which have the potential to impact on the quality of nearby water supplies as well as on landscape and wildlife values. In addition, where

human waste from labor camps pollutes local water supplies this may cause health problems for local people.

Rubbish from labor camps can have a variety of impacts, including providing a breeding place for flies and other vermin, being spread around the countryside by wind and animals to reduce visual values, attracting wildlife to feed on rubbish with the wildlife possibly becoming a local pest or suffering impacts from improper foods.

b. Oil pollution during construction

Oil pollution can arise from a range of sources during road projects. These include:

- Improper disposal of oil and grease during maintenance;
- Leaks from fuel and lubricant stores and leaks and spills during filling of storage tanks;
- Oil leaks from machinery such as generators; and
- Pollution from bitumen and solvents during storage or while applying bitumen surface, especially when application happens during rain periods.

Oil pollution does not need to be a major spill in order to create impacts. Significant impacts can also arise from continuous small amounts of oil pollution over a period of time. The most serious impacts tend to happen when the oil reaches water bodies, but pollution of habitats can also lead to impacts.

The most damaging aspects of oil pollution are the toxic effects of the more volatile components and the coating of organisms with oil which affects their ability to function. This latter effect can result from interfering with respiration (e.g. of invertebrates or small vertebrates), from hindering movement, or by other effects such as the loss of insulating properties of fur and feathers when coated in oil.

c. Run-off or slumping of stockpiles into stream

Stockpiles of earth, sand or other building materials should not be placed adjacent to watercourses. Under the effects of rain and wind these materials can move into streams leading to significant local and sometimes more widespread impacts.

d. Run-off of sediment-laden or polluted water from quarries and pits

Heavy rain can lead to accumulated dust and sediment being flushed out of quarries and pits and carried into nearby water bodies. The section on *Effect of Sediment on Water bodies* describes the potential environmental impacts of this.

e. Highway run-off pollution

Surface run-off from highways may contain sufficient fuel drip page and spilled materials (including toxic and hazardous materials) to adversely affect aquatic ecology and environmental aesthetics.

f. Accidental spills of hazardous material during operation

Some materials can have significant environmental impacts if spilled on roadways. This might occur as a result of a container falling from a vehicle or through the vehicle being involved in an accident. While significant effects are usually localized, the accidental introduction of some substances into waterways can have widespread impacts. Some pesticides fall into this category.

g. Noise pollution in nearby settlements and wildlife areas

Noise pollution can have significant impacts on human health, including damage to hearing and increasing stress levels. It can be particularly impacting in the vicinity of hospitals and similar institutions. Noise can significantly disrupt teaching in schools and can result in significant production losses and even death of stock in intensive livestock rearing facilities.

Where there are wildlife breeding areas (e.g. wetlands with breeding water birds) close to production sites the breeding success of these can be significantly reduced through such impacts as: preventing courtship behavior and nest building; causing stress to parent animals that affects their ability to forage for food; disturbing parent animals so that they abandon young animals; and causing adults or young to stampede with resultant deaths and injuries.

h. Vibration impacts during construction phase

Vibration can damage building structures and service infrastructure as well as having a psychological impact on residents. The most serious vibration impacts come from pile-driving, though the operation of heavy equipment can also cause vibration impacts.

i. Noise impact from road operation

The movement of vehicles along roads can have serious impacts, particularly on residential areas, schools and hospitals.

j. Air pollution during construction phase

The major source of air pollution during the construction phase is dust and similar particulate matter. This can arise from:

- The operation of equipment such as rock crushers;
- Movement and operation of construction machinery along the roadway and access tracks;
- Dust blowing off loads of fill as they are transported;
- Dust blowing from stockpiled material;
- Loading and unloading of fill; and
- Normal traffic using the unsealed road surface or bypass lanes.

Air pollution can also arise from the emissions from motors of equipment and vehicles used in road construction and from long lines of normal traffic waiting to pass through the construction area. This may become a problem locally for construction crews or for local residents.

Short-term exposure to high levels of dust can lead to immediate health problems through causing or exacerbating bronchial complaints and sinus and eye conditions. In addition, long-term exposure to some types of dust can have the additional impact of causing lung disease which can ultimately be fatal. Workers in quarries and rock-crushing plants are particularly susceptible to this condition.

In addition, dust can impact on crops in a variety of ways, including:

- Preventing or reducing fertilization, with resultant crop loss or decrease;
- Destroying natural protective leaf coatings and rendering the crop less healthy or more susceptible to disease and pests;
- Reducing photosynthesis by blocking sunlight falling on leaf surfaces, thus reducing plant growth and seed/fruit production; and

– Lowering market value of leafy vegetables.

k. Dust and air pollution from road operation

Traffic passing along a completed road gives rise to dust and air pollution, even where the road has a hard surface. The most significant pollutants will be carbon monoxide and lead (where leaded fuels are in use). Lead in particular can have significant health impacts, particularly on children. Busy roads should not be sited close to school buildings.

1.8 Post project maintenance

a. Impacts due to poor maintenance

Road maintenance plays an important role in avoiding or reducing ongoing impacts of road projects. Impacts such as erosion and sedimentation and road accidents are exacerbated by inadequate maintenance. Gravel roads are even more dependent on adequate and regular maintenance than are bitumen roads. Without such maintenance, gravel road sections can deteriorate and eventually become a transport bottle-neck in the local road system.

Whether or not a road is properly maintained after completion of construction or upgrading will depend on the capacity of the responsible authority to carry out maintenance – this in turn depends on the availability of adequate numbers of appropriately trained staff, appropriate equipment and adequate funding. Impact assessment of road projects should take capacity to carry out proper maintenance into account in identifying and evaluating impacts.

2. Environmental and Social Management Plan

RA should request an Environmental and Social Management Plan (ESMP) for every road project, irrespective of whether an ESIA has been carried out or not in order to make sure that the "Environmental Code of Practice for Road Works – ECPRW" is followed and, in case an ESIA was carried out, to ensure that mitigation measures proposed are implemented satisfactorily and timely. If an ESIA is carried out for a project, the ESMP will form an integral part of the ESIA. If not, the Roads Authority assisted by an environmental consultant, should prepare the ESMP.

2.1 Contents of the ESMP

The ESMP captures the critical project-specific issues to be managed and ensures that commitments made during the planning phase are incorporated into the design, construction and operational phases of the project. The ESMP presents the implementation responsibilities during the construction and operation phases. The ESMP is prepared using the following information:

– The findings and recommendations of the EIA study;
– The Environmental Code of Practice for Road Works;
– Relevant environmental standards;
– Other relevant pieces of legislation;
– Other government agency input; and
– Outcomes of community consultation.

An ESMP should contain the following elements:

i. An implementation plan for management of environmental and social impacts of the project, including:

- Mitigation measures to be incorporated into the detailed design,
- Construction phase activities,
- Operation phase activities;

ii. An emergency plan for accidents and spills, covering:
- Construction phase,
- Operation phase;

iii. An environmental monitoring plan, covering:
- Construction phase,
- Operation phase;

iv. Reporting requirements by:
- Roads Authority,
- Contractor;

v. Cost estimates and funding sources to implement the ESMP; and

vi. Construction guidelines that specifically address how the contractor will incorporate environmental considerations into the works.

The implementation plan for management of environmental and social impacts should be structured according to the following phases of the road project:

iv. Measures to be incorporated into the detailed design of the road;
v. Measures to be taken during construction; and
vi. Measures to be taken during operation of the road.

The ESMP also should include an Environmental Emergency Plan in order to identify critical incidents and vulnerable areas and populations during construction and operation of a road; and Environmental Monitoring Plan, in order to follow-up the environmental and social measures during the construction phase (but it may also be extended in some cases to the operational phase).

2.2 Environmental and Social Measures

Table No. 4 presents a summary of the environmental and social measures to prevent, mitigate and/or compensate the potential negative impacts for the road rehabilitation project.

Table: Environmental and Social Measures

Phase	Environmental and Social measures
Mobilization Phase:	
– Vegetation clearance in road reserve	– Such vegetation clearance will try as much as possible to avoid indigenous trees and minimum and necessary clearance will be enforced to reduce vegetation loss. – The sitting of temporary projects infrastructure (borrow pits, access roads, road upgrading camps, stockpiling areas) should avoid woodlands and wetlands. – Vegetation clearance for temporary infrastructure should be limited to the minimum. Areas cleared of vegetation should be re-vegetated to prevent soil erosion. However, plants and grasses for re-vegetation should be sourced

	within the project area to avoid introduction of exotic species. – Clearance of the vegetation should be limited to the core area of the project. In this case the diversions to accommodate traffic should be established within the ROW i.e. within the road reserve not beyond 60 m. – All road diversion should be closed when they are no longer in use, to allow the vegetation to recover.
– Disturbances to historical and archaeological findings during site clearance	– Notify the Engineer by giving the nature and location of the findings. The Engineer will consult the National Museums of Malawi. – The Contractor shall exercise necessary care so as not to damage artifacts or fossils uncovered during excavation operations and shall provide such cooperation and assistance as may be necessary to preserve the findings for removal or other disposition by the employer. – Where appropriate by reason of a discovery, the Engineer shall order delays in the time of performance or changes in the work, or both. If such delays, or changes or both are ordered, the time of performance and contract price shall be adjusted in accordance with the applicable clauses in the Contract Conditions.
Construction Phase: Physical Biological Impacts	
– Loss of farmlands for borrow sites or sources of construction materials	– Through public consultation, the used borrow pits wherever they will be found, may be used as water sources for livestock, if the community requests for that. Such borrow pits will be identified and their banks will be made with gentle slopes to avoid abrupt vertical falls of animals and children just in case they are used as swimming places. – Part of the charges for purchase of construction materials shall be channeled back for the rehabilitation or reinstatement of the borrow areas.
– Loss of farms along the road reserve	– Compensation in places where the farm cannot be avoided or left in place
– Contamination of water from leakages (oil and grease) of fuels and lubricants from the construction equipments	– Hydrocarbon spills around construction camps and working sites should be avoided to minimize health hazards to water sources. – Refueling of construction equipment shall not be permitted within 100m of the water sources. Thus, the contractor must ensure that unnecessary activities should not be done near the swampy area. – Dripping pans shall be used while servicing the construction equipment. – Any construction equipment dripping oils and lubricants shall be withdrawn from work until the leakages are sealed. – Dripping pans to be used to contain all hydrocarbon leakages on construction equipments – Refueling on designated areas. – In case of hydrocarbon spills, the contaminated soils will be collected and treated to remove the hydrocarbon and prevent the hydrocarbons from being washed away into water bodies. The contaminated soil can be treated by applying different remediation technologies like Phytoremediation, chemical treatment or soil washing.
– Poor air quality from dust and emissions around the construction site and material hauling routes	– Water sprinkling to reduce the dust at the construction site. – Use of dust masks to operators and those working in the dusty areas. – Use of goggles for all operators. – Construction machines/equipment will be well maintained to ensure total fuel combustion. All vehicles involved in construction works will be frequently checked and well serviced during the whole road construction period so that the level of exhaust emissions is reduced. – Speed of vehicles hauling construction materials will be reduced and the

	construction materials will be covered with tarpaulins.
– Poor disposal of solid and liquid waste	– Biodegradable materials wastes such as food leftovers, cardboards, papers will be collected and disposed off along with other wastes in the required disposal site. Other materials such as plastics, metal straps, reinforcing bars, unusable timber crates, steel cable pieces, pipes, etc., will be collected and recycled. – The wastewater will be collected or septic tanks and disposed off to the designated wastewater disposal points. – Upon completion of construction activities, all construction waste materials such as unusable aggregates with concrete debris, chip pings, sand will be sieved and the good one will be separated for reuse at other sites by the contractor, the residuals will be disposed as solid wastes.
<u>Socio-Economic Impacts</u>	
– Increase in traffic levels to the surrounding area leading to increased accidents	– Only essential traffic will be allowed to the construction site – Sensitization of the communities about the increased traffic – Alternatively finished materials such ready-made concrete products, pre-cast elements or pre-assembled materials can be delivered at site only when the need arises.
– Noise pollution	– Noises emitted from borrow and quarry sites, asphalt plants and the road construction equipment will add to an existing noise problem. Noise from traffic and the construction activity are anticipated to be temporary, the residents have to be notified when the noise expected is high, but for construction workers exposed to noise of the order above 85 dB (A) will be provided with the ear protective devises such as ear muffs and ear plugs. Also to safeguard health and safety of the workers, the contractors will be required through contractual arrangements to supply safety gear including coveralls, overalls, hard hats, goggles, dust-masks, etc.
– Reduced access for local communities	– Traffic management shall be put in place including itineraries for the site traffic on daily basis. – Prepare and install temporary traffic signs that are legible both during the day and at night indicating that the road works are in progress. – Contractor should always set aside an alternative detour/route to avoid misunderstanding with those on emergency trips.
– Involvement of child labor	– Conduct education and awareness to communities in relation to child labor and truancy – Ensure that casual labors are recognized by village, government leaders in order to avoid/combat child labor
– Socio-cultural changes	– Sensitization of the communities will help making the families understand how to deal with the incoming challenges.
– Increased risk to construction/project personnel	– Proper warnings on boards or posts will be provided to control unwanted visitors from entering the construction site. – Sensitization and training of the surrounding communities regarding the risks associated with construction activities. – Constant surveillance for security to make sure that there are no "uninvited guests" in the project area. – Proper occupational and health safety training programs should be done – All employees working on the construction site will be sensitized to use Personal Protective Equipment (PPE) when at work to avoid occupational risks. Such equipment include hard hats, ear plugs or ear muffs, dust coats or overalls, gloves, dust masks, goggles for eye protection, hard toed boots, etc.
– Destruction of utilities	– Compensation in places where properties cannot be avoided or left intact..

and services within right of way	– Road alignment to be changed where possible to avoid relocating some of the expensive properties. – Structures outside the construction width but within the road reserve may be left intact during the initial stages but with time they will need to be relocated to pave way for future expansion of the road if any. – Businesses permanent and temporary along the ROW will be displaced to allow for construction activities. Displacement may be temporary where the business is close to construction works but not within the road reserve.
– Increased transmission of communicable diseases	– Sensitization and health awareness campaigns to all involved in the project including service providers. – Construction workers to undergo health screening according to the National HIV/ AIDS Policy. – Project will assist the nearby health facility in sensitization of those involved in a project.
– Resettlement of properties	– Illegal occupants will be allowed to harvest their crops and no plating more crops after the harvest. – Those within 30m from the center line of the road alignment, valuation of their properties will be carried out and resettlement plan will be prepared to take care of these properties. – Alternatively, structures outside the construction width but within the road reserve may be left intact during the initial stages but with time they will need to be relocated to pave way for future expansion of the road.
Operation Phase	
– Increase in HIV/ AIDs cases	– Contractor to initiate STD and HIV/ AIDs awareness campaigns at the labor camps and settlements along the project roads. – Contractor to arrange for facilities for games and other recreation activities for labor after work. Such activities shall include common sports activities in the project area.
– Encroachment on the road reserve	– Provide concrete bollards or similar at 200 m intervals along the project road to demarcate the road reserve.
– Increased numbers of road kills	– Strategically placed warning road signs for drivers will ensure reduced risk. Public awareness on the road use will be emphasized including providing safe and dedicated access to pedestrians and bicyclists.
– Soil erosion	– Placement of adequate culverts and open channels to avoid overflow, thus carry storm water to the main channels. – Soil control measures on the slopes such as re-vegetation with flat growing grass particularly with the local species – Reinstate the gullies with the spoil.
– Flooding	– The road section in that area should be designed in a way that controls flooding of the road, e.g. to be uplifted and the flood diversion areas be designed to enhance flood ways of storm water and thus avoid flood dangers.
Demobilization Phase:	– Packaging materials, useless papers, wood and steel crates, cardboard, wrapping materials, boxes, sacks, drums, cans and chemical containers and any other unused materials. – During demobilization such kind of waste needs proper management otherwise it may turn out to be a nuisance and they can even cause diseases. However, all useful materials shall be moved from site. The wastes generated in this phase will receive the treatment.

	– For socio-economic impacts, protection of access to livelihood resources for affected populations; and initiatives to ensure sustainable community benefits, including employment, training, assistance with social service infrastructure development and social service delivery (in partnership with government and community based groups).

Source: ESIA, Environmental Consulting Benchmark, July 2011

3. Environmental and Social Monitoring Plan

Monitoring is the long-term process that normally begins at the start of the project and should continue throughout the life of the project. Its purpose is to establish benchmarks so that the nature and magnitude of anticipated environmental impacts are continually assessed. Therefore, monitoring involves the continuous or periodic review of mitigation activities to determine their effectiveness. Consequently, trends in environmental degradation or recovery can be established and previously unforeseen impacts can be identified and dealt with during the project road's life.

The Monitoring Plan included in the ESMP specifies the type of monitoring, who will do it, how much it will cost to carry out monitoring and what other inputs, such as training, are necessary.

Annex N° 4: Guidelines to prepare the Environmental Studies required by Law

4.1 Environmental and Social Impact Assessment (ESIA)

Executive Summary

Stand-alone, comprehensive, and summarizing of all salient points of the ESIA—should not exceed 15 pages.

Acknowledgments

Acknowledgments to all of those who were instrumental in the conduct and completion of the ESIA.

1. Introduction

Explains the purpose, structure, and audience of the ESIA, as well as the World Bank's and Malawi's needs for the ESIA.

2. Project Description

Describes the project in detail, including goals, objectives, beneficiaries, outcomes, value, schedule, and implementing bodies.

3. Legal and Administrative Framework

- Describes the main legal instrumentation for environmental control and management, particularly specific instrumentation regarding the type of project (for example, hydropower/dams), and the general effectiveness of the legal instruments. Indicates government bodies responsible for each of the relevant instruments.

- Lists relevant ratified international conventions, and where appropriate and relevant, a track record to confirm compliance with those conventions.

- Describes the institutional framework for administration of the relevant environmental legislation and implementation of policy, and analyzes the capacity and effectiveness of institutions.

4. Project Alternatives

Discusses the various project alternatives that were considered and weighs the environmental merits of each. Rationalizes the selected project on various grounds, including environmental aspects.

5. Methodology

Describes how the assessment was conducted, including: screening, scoping, and bounding; composition of the assessment team; impact scoring system used (if used); the public participation program (refer to annex A7.3); sources of data and information; field studies conducted; and other major inputs to the assessment.

6. Biophysical and Social Environment

Describes both the physical and social environment in which the project will take place, including soils, fauna, flora, protected areas, other special areas, biodiversity, population, ethnicity, relevant

cultural patterns and traits, employment, health and relationship of the people to the resources, land use, and development patterns. Some of these areas will be surveyed to obtain primary data.

7. Potential Environmental and Social Impacts

Identifies the important potential impacts (biophysical and social), the most effective mitigation to conduct, the residual impacts to be expected, and the cumulative effect to be expected. Impacts may or may not be rated on a scale of, for instance, very significant, significant, moderately significant, low significance, or no significance.

Includes descriptions of World Bank Safeguard Policies that may be triggered and how these will be addressed.

8. Environmental Management

- Includes a detailed description of how each of the impacts will be mitigated along with cost, scheduling, and the responsible body.

- Includes a monitoring procedure with schedule, cost and responsibilities, as well as a monitoring feedback mechanism.

- Includes a self-assessment of institutional capacity-building needs for effective environmental management with a schedule and cost of various types of the capacity building required.

9. Literature Cited

A complete reference to all literature cited in the assessment and preparation of the ESIA report.

Annexes

Various volumes covering separate studies (for example, social assessment, biological studies, and others) as well as an annex including detailed descriptions of impacts and most effective mitigations.

4.2 Environmental and Social Management Plan (ESMP)

1. Description of Adverse Impacts

Anticipated impacts are identified and summarized.

2. Description of Mitigation Measure

Each measure is described with reference to the effects it is intended to address. As needed, detailed plans, designs, equipment description, and operating procedures are included.

3. Description of Monitoring Program

Monitoring provides information on the occurrence of impacts. It helps identify how well mitigation measures are working, and where better mitigation may be needed. The monitoring program should identify what information will be collected, how, where, and how often. It should also indicate what level of impact will trigger a need for further mitigation. How environmental impacts are monitored is discussed below.

4. Responsibilities

The people, groups, or organizations that will carry out the mitigation and monitoring activities are defined, as well as to whom they will report and be responsible. There may be a need to train people to carry out these responsibilities and to provide them with equipment and supplies.

5. Implementation Schedule

The timing, frequency, and duration of mitigation measures and monitoring are specified in an implementation schedule and linked to the overall project schedule.

6. Cost Estimates and Source of Funds

These are specified for the initial project investment and for the mitigation and monitoring activities as the project is implemented. Funds to implement the environmental and social plans will predominantly come from the developer, with possible assistance from the SATTFP.

Annex N° 5: Guidelines to prepare the Safeguards Studies required by the World Bank

5.1 Chance Finds Procedures

Contracts for civil works involving excavations should normally incorporate procedures for dealing with situations in which buried Physical and Cultural Resources (PCR) are found unexpectedly. The final form of these procedures will depend upon the local regulatory environment, including any chance find procedures already incorporated in legislation dealing with antiquities or archaeology.

Note: The general guidance provided applies when there will be an archaeologist on call. In exceptional situations in which excavations are being carried out in PCR-rich areas such as a United Nations Educational, Scientific, and Cultural Organization World Heritage site, there will normally be an archaeologist on site to monitor the excavations and make decisions. Such cases will require a modified version of these procedures, to be agreed upon with the cultural authorities.

Chance find procedures commonly contain the following elements.

1. PCR Definition

This section should define the types of PCR covered by the procedures. In some cases, the chance find procedure is confined to archaeological finds; more commonly it covers all types of PCR. In the absence of any other definition from the local cultural authorities, the following definition could be used: "movable or immovable objects, sites, structures or groups of structures having archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance."

2. Ownership

This paragraph should state the identity of the owner of the artifacts found. Depending on the circumstances, the owner could typically be the state, the government, a religious institution, the landowner, or it could be left for later determination by the concerned authorities.

3. Recognition

This is the most difficult aspect to cover. As noted above, in PCR-sensitive areas, the procedure may require the contractor to be accompanied by a specialist. In other cases, the procedures may not specify how the contractor will recognize a PCR, and a clause may be requested by the contractor disclaiming liability.

4. Procedure upon Discovery

Suspension of Work

This paragraph may state that if a PCR is found during execution of the works, the contractor shall cease activity. However, it should specify whether *all works* should cease, or only the works immediately involved in the discovery, or, in some cases where large buried structures may be expected, all works may be stopped within a specified distance (for example, 50 meters) of the discovery. This issue should be informed by a qualified archaeologist.

After stopping work, the contractor must immediately report the discovery to the resident engineer.

The contractor may not be entitled to claim compensation for work suspension during this period.

The resident engineer may be entitled to suspend work and request that the contractor provide excavations at the contractor's expense if the engineer thinks that a discovery was made and not reported.

Demarcation of the Discovery Site

With the approval of the resident engineer, the contractor is then required to temporarily demarcate and limit access to the site.

Non-suspension of Work

The procedure upon discovery may help the resident engineer decide whether the PCR can be removed and work can continue, for example, in cases where the find is one coin.

Chance Find Report

The contractor should then, at the request of the resident engineer, and within a specified time period, complete a Chance Find Report, recording:

- Date and time of discovery;
- Location of the discovery;
- Description of the PCR;
- Estimated weight and dimensions of the PCR; and
- Temporary protection implemented.

The Chance Find Report should be submitted to the resident engineer and other concerned parties as agreed upon with the cultural authority and in accordance with national legislation. The resident engineer, or other party as agreed, is required to inform the cultural authority accordingly.

Arrival and Actions of Cultural Authority

The cultural authority ensures that a representative will arrive at the discovery site within an agreed upon time, such as 24 hours, and determines the action to be taken. Such actions may include, but are not limited to:

- Removal of PCR deemed to be significant;
- Execution of further excavation within a specified distance of the discovery point; or
- Extension or reduction of the area demarcated by the contractor.

These actions should be taken within a specified period, for example, seven days.

If the cultural authority fails to arrive within the stipulated period (for example, 24 hours), the resident engineer may have the authority to extend the period by a further stipulated time.

If the cultural authority fails to arrive after the extension period, the resident engineer may have the authority to instruct the contractor to remove the PCR or undertake other mitigating measures and resume work. Such additional works can be charged to the contract. However, the contractor may not be entitled to claim compensation for work suspension during this period.

Further Suspension of Work

During this seven-day period, the cultural authority may be entitled to request the temporary suspension of the work at or in the vicinity of the discovery site for an additional period of up to, for example, 30 days.

The contractor may or may not be entitled to claim compensation for work suspension during this period. However, the contractor will be entitled to establish an agreement with the cultural authority for additional services or resources during this further period under a separate contract with the cultural authority.

5.2 Public Consultation Plan

The purpose of community involvement is not to find the "right" answer from the community, but to engage the community in the project so that they can share ownership and have the opportunity to inform the design process. It will also give the community the comfort of knowing early on in the process the mechanism through which affected individuals/households can make their voices heard. In developing a strategy for public involvement, there are a number issues to keep in mind:

- Define goals clearly;
- Secure commitment to effective implementation;
- Plan consultation timing and phasing;
- Provide adequate resources;
- Identify and acknowledge site-specific sensitivities;
- Identify and acknowledge historical context;
- Recognize the interest of developers/operators; and
- Be prepared to hear different views.

In building a public involvement program, the following outline must be followed:

- Identify all stakeholder groups (typically integrated with social assessment)**.** Who will be affected directly and indirectly? Who else might have an interest or feel that they are affected?

- Identify the key issues for which public involvement will be required (scoping). These key issues would include:
  - Environmental and social issues, or decisions at stake;
  - Key organizations and interested parties involved;
  - Local authorities and the agencies involved;
  - Size of the issue or importance of the decision; and
  - Urgency and time frame.

- Understand the decision-making process:
  - Identification of parties making the decisions; and
  - Where in the project cycle decisions are made.

- Determine the necessary level of involvement. Meaningful public involvement takes place at three levels:

  - Conveying information to the public;
  - Listening to the opinions and preferences of the public; and
  - Involving the public in decision-making.

The nature and size of the project, combined with both the nature and number of stakeholders and the status of national legislation, will largely define when, where, and at what level public involvement is required for an EA and the environmental management plan.

Timely disclosure of information is key, and it may be useful to develop systems to ensure that stakeholders receive information on time and in an accessible format. While it is important that consultation take place before major decision points, the aim should be to facilitate consultation throughout the preparation and implementation phases. This implies that consultation will often be necessary as part of the research effort of the environmental assessment and in the development of mitigation measures during the analysis phase of the study. When building information disclosure systems:

- Select most effective involvement techniques to be used;
- Define a communication methodology; and
- Develop a budget.

Table: Methods and Levels of Public Involvement

Method	Description	Target	Level of public involvement	Public involvement analysis
Media announcement	– Operator will describe what is occurring – Operator could solicit input from the general public	General public	– Education – Information feedback	– No participation – Some participation
Storefront access	– Operator has open door policy for public to walk in and discuss project, issues, and offer input	General public	– Education to information feedback	– None to some participation
Newsletter	– Operator forwards regular progress newsletters to selected individuals and groups (stakeholders)	Identified stakeholders, groups, and individuals	– Education	– No participation
Questionnaire	– This method is more for gathering information as a project input	General public	– Education and information gathering, but could be categorized as consultation as well	– Could be reasonable participation
Interest group meetings	– Operator holds regular meetings with different interest groups to educate – For information feedback – For input to decision making	Identified stakeholders, groups	– Education – Information feedback – Consultation or joint planning	– No participation – Some participation – More and possibly significant participation
Advisory groups	– Operator forms an advisory group of representatives of various stakeholder groups	Advisory groups of selected individuals	– Consultation – Joint planning	– Some participation – Significant participation
General meetings	– Operator holds general meetings at strategic times during the process	General public	– Education – Information feedback	– No participation – Some participation
Knowledgeable and influential persons	– Operator identifies the knowledgeable and influential individuals in the community	Knowledgeable and influential persons	– Education – Information feedback – Consultation	– No participation – Some participation – Some participation, but could be very significant
Planning group	– Operator assembles a group from the stakeholders who will provide planning input	Planning group of selected or elected individuals	– Joint planning	– Very significant participation

Annex N° 6: Guidelines for the Participation and Disclosure process

The purpose of community involvement is not to find the 'right' answer from the community, but to engage the community in the sub project so that they can share ownership and to give them the opportunity to inform the design process. It will also give the community the comfort of knowing early on in the process the mechanism through which affected individuals/households will be treated. In developing strategy for public involvement there are a number of key issues that must be considered:

- Define goals clearly
- Secure commitment to effective implementation
- Plan consultation timing and phasing
- Provide adequate resources
- Be aware of site specific sensitivities
- Be aware of the historical context
- Recognize the interest of developers/operators
- Be prepared to hear different views.

In planning for the process of a public involvement program, the following must be followed:

- Identify all stakeholder groups (typically integrated with social assessment)**.** Who will be affected directly and indirectly? Who else might have an interest or feel that they are affected?

- Identify the key issues around which public involvement will be required (scoping). These key issues would include:
  - environmental and social issues, or decisions at stake
  - key organizations and interested parties involved
  - local authorities and the agencies involved
  - size of the issue or importance of the decision
  - urgency and time frame

- Understand the decision making process
  - identification of parties making the decisions
  - where in the project cycle decisions are made

- Determine the necessary level of involvement. Public involvement takes place at 3 levels:
  - conveying information to the public
  - listening to the opinions and preferences of the public
  - involving the public in making decisions

The nature and size of the project, combined with both the nature and number of stakeholders and the status of national legislation, will largely define when, where, and at what level public involvement is required for an EA and the Environmental and Social Management Plan.

- Identify key points to be included in the public involvement process

Timely disclosure of information is important and it may be useful to develop systems to ensure that stakeholders receive information on time and in an accessible format. Whilst it is important that consultation take place before major decision points, the aim should be to facilitate consultation throughout the preparation and implementation phases. This implies that consultation

will often be necessary as part of the research effort of the EA and in the development of mitigation measures during the analysis phase of the study.

- Select most effective involvement techniques to be used
- Define a communication methodology
- Develop a budget

Table: Methods and Levels of Public Involvement

Method	Description	Target	Level of Public Involvement	Public Involvement Analysis
Media announcement	– Operator will describe what is occurring; – Operator could solicit input from the general public	General public	– Education – Information feedback	– No participation – Some participation
Store front access	– Operator has open door policy for public to "walk in" and discuss project, issues and offer input	General public	– Education to information feedback	– None to some participation
Newsletter	– Operator forwards regular progress newsletters to selected individuals and groups (stakeholders)	Identified stakeholders, groups, individuals	– Education	– No participation
Questionnaire	– This method is more for gathering information as input to the project	General public	– Education and information gathering	– Could be reasonable participation
Interest group meetings	– Operator holds regular meetings with different interest groups to educate – for information feedback – for input to decision making	Identified stakeholders – groups	– education – information feedback – consultation or joint planning	– No participation – Some participation – More and possibly significant participation
Advisory groups	– Operator formulates an advisory group comprised of representatives of various stakeholder groups	Advisory groups comprised of selected individuals	– consultation – joint planning	– Some participation – significant participation
General meetings	– Operator holds general meetings at strategic times during the process	General public	– Education – Information feedback	– No participation – Some participation
Knowledgeable and influential persons	– Operator identifies the knowledgeable and influential individuals in the community	Knowledgeable and influential persons	– Education – Information feedback – Consultation	– No participation – Some participation – Some participation but could be very significant
Planning group	– Operator assembles a group from the stakeholders who will provide planning input	Planning group comprised of selected individuals	– Joint planning	– Very significant participation

Annex N° 7: Templates of the Environmental and Social Management Tools

7.1 Environmental and Social Screening Form (ESSF)

ESSF ENVIRONMENTAL AND SOCIAL SCREENING FORM

Accelerating Malawi's Economic Growth

1. General Information			
Name of the project:			
Implementing Agency:			
Location:	– **Region:** – **District:** – **City/Village:**		
Evaluator name:		**Date of field visit:**	

2. Project	
Description and general purpose of the project: _____ _____	**Specific works and activities to be undertaken** - _____ - _____

3. Stakeholders	
Direct: - _____ - _____	**Indirect:** - _____ - _____

4. Potential impacts and measures			
	Impacts		**Measures**
Positive:	**Direct:** - _____ - _____		- _____ - _____
	Indirect: - _____ - _____		- _____ - _____
Negative:	**Direct:** - _____ - _____		- _____ - _____
	Indirect: - _____ - _____		- _____ - _____

5. First Step: Classification in function of the Magnitude of the project

Scope of the project:
A. New Project
B. Upgrading
C. Rehabilitation
D. Maintenance

Hierarchy of the road:
a. New construction
b. Upgrade
c. Rehabilitation
d. Maintenance

Matrix 1. Classification in function of the Magnitude

Scope of works	Hierarchy of the road		
	Regional	District	Rural
a. New construction	I	I	II
b. Upgrade	I	II	II
c. Rehabilitation	II	II	III
d. Maintenance	III	IV	IV

6. Second Preliminary Classification: Environmental Site Sensitivity

HIGH	MODERATE	LOW
☐ Protected Areas in the DIA (National Parks, Forest Reserve, etc.)	☐ Protected Areas in the IIA or in Buffer Zones (National Parks, etc)	☐ Intervened areas out of Protected Areas (national parks, etc.)
☐ High danger of environmental degradation (deforestation, hunt, etc.)	☐ Moderate danger of environmental degradation (deforestation, others)	☐ Low danger of environmental degradation (deforestation, etc.)
☐ Sensitive or critical ecosystem in the DIA (wetlands, mangrove swamps, forests, and others)	☐ Sensitive or critical ecosystems in the IIA (wetlands, mangrove swamps, forests, and others)	☐ No sensitive or critical ecosystems in the influence area (wetlands, mangrove swamps, forests, others)
☐ Mountainous topography (>35% of slope) when the project expects construction of road, pipelines, etc.	☐ Wavy topography (15–35% of slope) when the project expects the construction of road, pipelines,	☐ Flat topography (<15% of slope), when expects the construction of access road, pipelines, etc.
☐ High risk to natural disasters (floods, earthquake, others)	☐ Moderate risk to natural disasters (floods, earthquake, others)	☐ Low risk to natural disasters (floods, earthquake, others)
☐ Presence of places of significant cultural/historical interest in the DIA	☐ Presence of places of cultural and historical significance in the IIA	☐ Absence of places with cultural and historical significance

Environmental Site Sensitivity: _____

DIA: Direct Influence Area; **IIA:** Indirect Influence Area

7. Environmental Risk Level: Category

Category A:
Projects with high environmental risk level

Category B:
Projects with moderate environmental risk level

Category C:
Projects with low environmental risk level

Matrix 1. Environmental Category

Preliminary classification	Site sensitivity		
	High	Moderate	Low
I	A	A	B
II	A	B	B
III	B	B	C
IV	B	C	C

8. Social Risk Level		Social Risk Level
☐ Potential **Vulnerable Group** (affect/ benefit) is expecting in the project: OP/BP 4.10 **If is High, apply next section VGSF**	☐ In the Direct Influence Area	**HIGH**
	☐ In the Indirect Influence Area	**MODERATE**
	☐ No presence of Vulnerable Groups	**LOW**
☐ Potential **Resettlement/Compensation** issues is expecting in the project: **If is High or Moderate, apply next section RSF**	☐ More than 200 PAPs	**HIGH**
	☐ More than 10 PAPs less than 200 PAPs	**MODERATE**
	☐ Less than 10 PAPs	**LOW**

9. Environmental and Social studies required by National Law and Safeguard Policies		
☐ **OP/BP 4.01**	☐ Cat. A ☐ Cat. B ☐ Cat. C	☐ Environmental and Social Impact Assessment (ESIA) ☐ Environmental and Social Management Plan (ESMP) ☐ Good Environmental and Social Practices Guidelines
☐ **OP/BP 4.10**	☐ HIGH	☐ Vulnerable Group Plan (VGP)
☐ **OP/BP 4.12** ☐ **OP/BP 4.12**	☐ HIGH ☐ MODERATE	☐ Resettlement Action Plan (RAP) ☐ Abbreviated Resettlement Action Plan (ARAP)
☐ **OP/BP 4.11**	☐ HIGH	☐ Chance Find Procedures Plan (CFPP) to be include as part of the ESIA or PESIA
		☐ Others: _____

10. Environmental Budget for the ESMP implementation

- Estimated budget of the project: US$ _____
- Estimated budget for the ESMP implementation US$ _____

TOTAL estimated budget of the project: US$ _____

Nota: This budget doesn't include the resettlement and vulnerable group plans implementations)

Matrix 2. Environmental Budget for the ESMP implementation

Preliminary classification	Site sensitivity		
	High	Moderate	Low
I	6%	5%	4%
II	5%	4%	3%
III	4%	3%	2%
IV	3%	2%	1%

11. Map, Design, and/or Other Supporting Drawing and Layout

12. Observations

Comments:
_____
_____

Officer:	Signature:	Date:

If in Section 8 of the ESSF, the information about the Involuntary Resettlement is "checked", the next form should be applied.

RESETTLEMENT/COMPENSATION SCREENING FORM (RSF)

Probable Involuntary Resettlement Effects	Yes	No	Not known	Possible	Remarks
– Will the project include any physical construction work?					
– Does the project include upgrading or rehabilitation of existing physical facilities?					
– Is any project effect likely lead to loss of housing, other assets, resource use, or incomes/livelihoods? Estimated number?					
– Is land appropriation likely to be necessary? Estimated area?					
– Is the site for land appropriation known?					
– Is the ownership status and current usage of the land known?					
– Will easements be utilized within an existing right of way?					
– Are there any people without land titles who live or earn their livelihood at the site or within the right of way? Estimated Number?					
– Will there be loss of housing? Estimated number?					
– Will there be loss of agricultural plots?					
– Will there be losses of crops, trees, or fixed assets?					
– Will there be loss of businesses or enterprises?					
– Will there be loss of incomes and livelihoods?					
– Will people lose access to facilities, services, or natural resources?					
– Will any social or economic activities be affected by land use–related changes?					
If involuntary resettlement impacts are expected:					
– Are local laws and regulations compatible with the World Bank's Involuntary Resettlement Policy?					
– Will coordination with the RA be required to deal with land appropriation?					
– Are training and capacity-building interventions required prior to resettlement planning and implementation?					
Information on affected persons:					
– Any estimate of the likely number of households that will be affected by the project?					Number:
– Are any of the households poor, headed by a woman, or vulnerable to poverty risks?					Number
– Are any of the PAP from vulnerable groups? If yes, explain:					Number:

Involuntary Resettlement/Compensation Classification:
After reviewing the answers above, the project team leader and social development/resettlement specialist agree, subject to confirmation, that the project is categorized as noted below.

[ ] HIGH risk Significant resettlement impact (more than 200 people affected), Full Resettlement/Compensation Action Plan (RAP) is required.

[ ] MODERATE risk Limited resettlement impact (less than 200 people affected), Abbreviated Resettlement Action Plan (ARAP) is required.

[ ] LOW risk No resettlement impact, No resettlement plan is required.

[ ] Consultant support is required to prepare RAP or ARAP.

7.2 Environmental and Social Monitoring Report (ESMR)

ESMR ENVIRONMENTAL AND SOCIAL MONITORING REPORT

1. General Information			
Name of the project:			
Implementing Agency:			
Location:	– **Region:** – **District:** – **City/Village:**		
Evaluator name and sign:		**Date of field visit:**	

1. **Environmental and Social Effects**
   Summary of the environmental effects of the project predicted during project planning.

2. **Environmental and Social Effects Observed in the Field Visit**
   Summary of the environmental effects observed in the field visit:
   - Predicted effects and nature of observation; and
   - Unpredicted effects and nature of observation.

   People participating in the field visit:

Name	Institution	Charge	Sign

3. **Compliance of the Environmental and Social Specification**
   Assessment of how project is complying with environmental design specifications, including environmental protection and control, mitigation, and compensation measures, if any.

4. **Results of the Field Visit**
   Provide results of the evaluation of specific biophysical and socioeconomic effects, including deviations from baseline values if available.

5. **Conclusions and Recommendations for Project Operation**
   Recommended adjustments to project operations if any, including rationale for the recommendations.

6. **Conclusions and Recommendations for Monitoring Program**
   Recommended adjustments to the monitoring program, if any, including rationale for recommendations.

7. **Other Observations, Recommendations, and Conclusions**

7.3 Environmental and Social Final Report (ESFR)

ESFR ENVIRONMENTAL AND SOCIAL FINAL REPORT

Accelerating Malawi's Economic Growth

1. General Information			
Name of the project:			
Implementing Agency:			
Location:	– **Region:** – **District:** – **City/Village:**		
Evaluator name and sign:		**Date of field visit:**	

1. Activities Realized

On (date) _____, the final review of the environmental and social aspects corresponding to the activity _____ was conducted to verify fulfillment of the mitigation measures proposed for the project, as well as to ascertain if other negative impacts have appeared during the period in which the activity took place.

There was content the commission integrated by the following persons:

Name	Institution	Charge	Sign

2. Background

Capture case record including dates, brief narration of the problem, and recommendations from previous opportunities.

3. Results of the Examination

Describe in detail the conditions in which the mitigation measures were developed, the grade of fulfillment, and current state, explaining when necessary reasons why measures have not been completed. Completing the table below will help visualize this information.

No.	Mitigation measures	Accomplishment			Time still needed to accomplish measures	Observations
		Yes	No	%		

4. Conclusions

Based on the examination, prepare conclusions regarding fulfillment of the mitigation measures and recommendations.